IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA	)	
	)	
	)	Civil Action No.
Plaintiff,	)	
	)	
v.	)	
	)	
CUMMINS ENGINE COMPANY, INC.	)	
	)	
	)	
Defendant.	)	

CONSENT DECREE

WHEREAS, Plaintiff, the United States of America, at the request of the Administrator of the United States Environmental Protection Agency ("EPA"), and by authority of the Attorney General, filed the Complaint herein against Defendant, Cummins Engine Company, Inc. ("Cummins") alleging violations of the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq., (the "Act") in connection with certain heavy-duty diesel engines manufactured and sold by Cummins, and has filed similar complaints in related actions against other heavy-duty diesel engine manufacturers; and

WHEREAS, Cummins denies the violations alleged in the Complaint; and

WHEREAS, the United States and Cummins have consented to entry of this Consent Decree without trial of any issue; and

WHEREAS, EPA is charged with primary responsibility for enforcing the Clean Air Act; and

WHEREAS, EPA has conducted an extensive investigation of the matters which are the subject of the Consent Decree; and

WHEREAS, the United States has determined that the comprehensive relief set forth in this Consent Decree will provide protection of the health and welfare of the people of the United States; and

WHEREAS, the United States and Cummins agree, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the United States and Cummins in good faith, that implementation of this Consent Decree will avoid

prolonged and complicated litigation between the Parties, and that this Consent Decree is fair, reasonable, and in the public interest;

NOW, THEREFORE, before the taking of any testimony, and without trial or adjudication of any issue of fact or law and without this Consent Decree constituting an admission by any Party with respect to any such issue, and the Court having considered the matter and being duly advised, it is hereby ORDERED AND DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action and the Parties to this Consent Decree pursuant to 28 U.S.C. §§ 1331, 1345, 1355, and Title II of the Act, 42 U.S.C. §§ 7521-7590.

2. For purposes of this action and this Consent Decree, Cummins does not contest that venue is proper in this District pursuant to Sections 204 and 205 of the Act, 42 U.S.C. §§ 7523 and 7524.

II. DEFINITIONS

3. Unless specifically defined in this Section or elsewhere in this Consent Decree, terms used herein shall have the meanings currently set forth in Sections 216 and 302 of the Act, 42 U.S.C. §§ 7550 and 7602, and any regulation promulgated under Title II

of the Act, 42 U.S.C. §§ 7521-7590. The following definitions shall apply for purposes of this Consent Decree.

"Act" means the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq.

"A,B&T" means the motor vehicle engine emission averaging, banking and trading program set forth in 40 C.F.R. §§ 86.091-15, 86.092-15, 86.094-15, and 86.004-15.

"AECD," or "Auxiliary Emission Control Device," means any device or element of design that senses temperature, vehicle speed, engine RPM, transmission gear, manifold vacuum, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of the emission control system.

"California Campaign Engines" mean those Campaign Engines certified to California emissions standards and installed in vehicles registered in the State of California, from the following engine families: 403N (WCEXHO359BAH), CPL 2279, 2280, 2514, 2515.

"California Settlement Agreement" means the agreement between Cummins and the California Air Resources Board resolving California claims with respect to matters addressed in this Consent Decree.

"Campaign Engines" mean electronically controlled engines manufactured and sold by Cummins prior to July 7, 1998 from the

following engine families: 403M (WCEXHO359BAG) CPL 2024, 2098, 2512, 2513, and California Campaign Engines.

"CARB" means the California Air Resources Board.

"Certificate of Conformity" or "Certificate" means a certificate issued by EPA pursuant to Section 206 of the Act, 42 U.S.C. § 7525.

"Consent Decree" or "Decree" means this Consent Decree, including the Appendices specifically identified herein.

"Date of Entry" means the date on which this Consent Decree is entered as a final judgment by the United States District Court for the District of Columbia.

"Date of Filing" means the date this Consent Decree is filed with the Clerk of the United States District Court for the District of Columbia.

"Day" means a calendar day. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the close of business of the next working day.

"Defeat Device" means an AECD that reduces the effectiveness of the emission control system under conditions that may reasonably be expected to be encountered in normal vehicle operation and use, unless:

(a) such conditions are substantially included in the Federal emission test procedure;

(b) the need for the AECD is justified in terms of protecting the vehicle against damage or accident; or

(c) the AECD does not go beyond the requirements of engine starting.

"Emissions Surface Limits" means the EURO III Test Protocol-based maximum allowable emission levels set forth in Paragraphs 14, 16, 17, 19 and 20, as determined in accordance with Section 1 of Appendix C to this Consent Decree.

"Engine Rebuild" means an activity occurring over one or more maintenance or repair events involving:

(a) disassembly of the engine, including removal of the cylinder heads; and

(b) the replacement or reconditioning of more than one Major Cylinder Component in more than half the cylinders.

"EPA" means the United States Environmental Protection Agency.

"EURO III Composite Value Limits" means the EURO III Test Protocol-based maximum composite value emission limits set forth in Paragraphs 14, 16, 17, 19 and 20, as determined in accordance with Section 1 of Appendix C to this Consent Decree.

"EURO III Limits" means, collectively, the EURO III Composite Value Limits and the Emissions Surface Limits.

"EURO III Test Protocol" means the test protocol for measuring diesel engine emissions specified in Section 1 of Appendix C to this Consent Decree.

"FTP" means the Federal Test Procedure for HDDEs specified in 40 C.F.R. Part 86.

"HDDE" means a diesel (as defined in 40 C.F.R. § 86.090-2) heavy-duty engine (as defined in 40 C.F.R. §§ 86.082-2(b)), for which a United States Certificate of Conformity is sought or required.

"HHDDE" means an HDDE certified as a motor vehicle heavy heavy-duty engine in accordance with the definition of "primary intended service class" in 40 C.F.R. § 86.085-2.

"Interim Engines" means all new electronically controlled LMB Engines manufactured on or after November 1, 1998, until compliance with the provisions of Paragraph 16 are achieved; and all new electronically controlled Truck HHDDEs manufactured on or after December 31, 1998, until compliance with the provisions of Paragraph 20 are achieved.

"LHDDE" means an HDDE certified as a motor vehicle light heavy-duty engine in accordance with the definition of "primary intended service class" in 40 C.F.R. §§ 86.085-2.

"LMB Engine" means an LHDDE or MHDDE manufactured by Cummins, or any HDDE manufactured by Cummins and offered for sale or intended for installation in an Urban Bus.

"Low NOx Rebuild Kit" means the software and/or minor hardware included by Cummins in a rebuild kit offered for sale in the United States for purposes of complying with Section IX.B.

"Major Cylinder Component" means piston assembly, cylinder liner, connecting rod, or piston ring set.

"MHDDE" means an HDDE certified as a motor vehicle medium heavy-duty engine in accordance with the definition of "primary intended service class" in 40 C.F.R. § 86.085-2.

"Model Year" means (a) for on-highway engines, the period defined at 40 C.F.R. Part 85, Subpart X; and (b) for Nonroad CI Engines, the period defined at 40 C.F.R. § 89.2.

"NMHC" means non-methane hydrocarbon.

"NOx" means oxides of nitrogen, as defined in 40 C.F.R. § 86.082-2.

"Nonroad CI Engine" means a compression-ignition engine subject to the regulations in 40 C.F.R. Part 89.

"NTE Limit" means the Not to Exceed Emission Limit, i.e., the maximum allowable NOx, NOx plus NMHC, and PM emission levels set forth in Paragraphs 14, 16, 17, 19 and 20, as determined in accordance with Section 2 of Appendix C to this Consent Decree.

"NOx plus NMHC Limit" means the maximum allowable NOx plus NMHC emission levels, which are set forth in Paragraphs 17 and 20 of this Consent Decree, when an engine is tested using the applicable FTP.

"Opacity Limit" means the maximum opacity level set forth in Paragraphs 14, 16, 17, 19 and 20 that is applicable within the Not to Exceed Control Area specified in Section 2 of Appendix C.

"Paragraph" means a portion of this Consent Decree identified by an Arabic numeral.

"Parties" means the United States and Cummins.

"Pickup Engine" means an electronically controlled MHDDE sold or offered for sale by Cummins for installation in a Chrysler pickup truck.

"PM" means particulate matter.

"Pre-Settlement Engines" means all electronically controlled engines equipped by Cummins with highway cruise software and manufactured, with respect to LMB Engines, prior to November 1, 1998, and, with respect to Truck HHDDEs, prior to December 31, 1998. Appendix A to this Consent Decree lists Cummins's Pre-Settlement Engine Families.

"Section" means a portion of this Consent Decree identified by a Roman numeral.

"Settling HDDE Manufacturers" means Caterpillar Inc., Cummins Engine Company, Inc., Detroit Diesel Corporation, Mack Trucks, Inc., Renault V.I., and Volvo Truck Corporation.

"Smoke Limit" means the maximum emission levels set forth in Paragraphs 14, 16, 17, 19 and 20, as measured in accordance with

Appendix C, applicable within the Not to Exceed Control Area specified in Section 2 of Appendix C to this Consent Decree.

"TNTE Limit" means the "Transient Load Response Not To Exceed Limit," i.e., the TNTE Test Protocol-based maximum emission levels set forth in Paragraphs 23 through 25 and determined in accordance with Section 2 of Appendix C to this Consent Decree.

"TNTE Test Protocol" means the test protocol for measuring diesel engine NOx plus NMHC and PM emissions during hard accelerations which is set forth in Appendix C to this Consent Decree.

"Truck HHDDE" means an HHDDE manufactured by Cummins, except any HHDDE specifically included in the definition of LMB Engine herein.

"United States" means the United States of America.

"Urban Bus" means an urban bus as defined at 40 C.F.R. § 86.093-2.

"Useful Life" means the applicable useful life of an engine as presently defined in 40 C.F.R. Parts 86 and 89.

III. APPLICABILITY

4. This Consent Decree applies to and is binding upon the United States and Cummins, its agents, successors, and assigns. Any change in Cummins's ownership or corporate or other legal status shall in no way alter Cummins's responsibilities under

this Consent Decree. In any action to enforce this Consent Decree, Cummins shall not raise as a defense the failure of its officers, directors, agents, servants, contractors, or employees to take actions necessary to comply with the provisions hereof.

IV. FACTUAL BACKGROUND

5. Cummins has manufactured and sold, offered for sale, or introduced or delivered for introduction into commerce in the United States new motor vehicle engines, including the Pre-Settlement Engines.

6. Each Certificate of Conformity issued to Cummins by EPA during the time period relevant to the claims alleged in the Complaint provides that the Certificate covers only those new motor vehicle engines which conform in all material respects to the engine design specifications provided to EPA in the Certificate application for such engines, except any Certificate of Conformity issued by EPA for engines Cummins intended or intends to sell only in California provides that the Certificate covers only those new motor vehicle engines which conform, in all material respects, to the engine design specifications described in the application submitted to CARB. In addition, each Conditional Certificate of Conformity issued to Cummins for Model Year 1998 specifically provides that the Certificate does not cover engines equipped with Defeat Devices.

7. Cummins has installed on engines manufactured for sale in the United States certain computer-based strategies to adjust the timing of fuel injection, including, but not limited to its highway cruise strategy and other injection-timing strategies on all of its Pre-Settlement Engines. The United States alleges in its Complaint that these strategies have the effect of advancing injection timing relative to the injection timing used by Cummins to control NOx emissions on the FTP. The United States further alleges that these strategies have an adverse effect on the engine's emission control system for NOx, that they were not adequately disclosed to EPA, that they are Defeat Devices prohibited under the Act, and that these engines are not covered by an EPA-issued Certificate of Conformity. Cummins has also designated the "rated speed" of its engines in its certification applications. For certain mechanical MHDDEs, Cummins has designated a rated speed higher than the engine speed at which the governor engages. The United States alleges in its Complaint that this practice is in violation of applicable regulations.

8. Cummins denies the material allegations of the Complaint and contends that its engines fully comply with NOx emissions limits, that it fully and adequately disclosed its emission control systems to EPA, that it did not employ Defeat Devices prohibited by the Act, that these engines are covered by an EPA-

issued Certificate of Conformity, and that it properly designated the rated speed of its engines.

V. OBJECTIVES

9. Cummins has represented that it cannot immediately eliminate the current injection-timing strategies at issue by recalibrating the engine computer software without causing such damage to the engine in-use as to make the engine unmarketable. Cummins has agreed to develop and to use new technology to change existing electronic injection-timing strategies and meet the emission levels specified herein as quickly as is technologically feasible, and Cummins represents that the schedule of emissions reductions set forth in Paragraphs 16, 17, 19 and 20 herein is, based on the best information currently available, the most expeditious schedule technologically feasible by Cummins. Cummins also represents that it redesignated the rated speed of affected engines so that the rated speed for its certified engines does not exceed the engine speed at which the governor engages. Accordingly, the objectives of this Consent Decree are: (i) to resolve the United States' claims for injunctive relief as described in Sections VI through X and XVIII through XIX and Paragraph 116(a), as follows: (a) to have Cummins reduce emissions from Interim Engines and meet specified emission levels in accordance with the schedule set forth herein by modifying the current injection-timing strategies and implementing new

technology; (b) to resolve disputed claims arising under the Act and ensure compliance with the Act by having Cummins replace the strategies that the United States alleges are defeat devices and providing for emissions and compliance monitoring during the term of this Decree through supplementary test requirements, auditing procedures, in-use testing of engines, and reporting requirements; (c) to resolve the United States' claims regarding Cummins' designation of rated speed; (d) to have Cummins reduce ambient levels of air pollutants by accelerating implementation of more stringent on-road HDDE and Nonroad CI Engine emission standards and other emission reduction programs; and (ii) to resolve the United States' claims for civil penalties as described in Paragraphs 113 and 137.

VI. REQUIREMENTS FOR ON-ROAD HDDEs

A. Requirements for Applications for Certificates of Conformity

10. In each application for a Certificate of Conformity submitted by Cummins for an Interim Engine family, Cummins shall state whether the application covers LMB Engines or Truck HHDDEs. If, based on reasonable evidence, EPA concludes that the engines covered by an application for Truck HHDDEs are intended for use as LMB Engines, EPA may deny the application, notwithstanding any statement by Cummins to the contrary.

11. Commencing with applications for Certificates of Conformity for 1999 Model Year engines, Cummins shall comply with all AECD reporting requirements found in 40 C.F.R. Part 86, Subpart A, consistent with EPA's regulations and written guidance of October 1998 or by reference to Appendix B-1 through B-4, as applicable under this Consent Decree, including the requirements to identify and provide a detailed description of all AECDs and to provide a justification for each AECD, consistent with applicable Appendix B-1 through B-4 requirements and EPA's guidance, that results in a reduction in the effectiveness of the emission control system.

11(a). As of the Entry Date, Cummins shall not designate in its certification applications for HDDE's a rated speed that exceeds the engine speed at which the governor engages.

B. Applicability of Additional Compliance Requirements

12. All EURO III, NTE, TNTE, and Smoke (or alternate Opacity) Limits specified in Paragraphs 14, 16, 17, 19 and 20 shall apply to all normal vehicle operation and use. Subject to the provisions of this Paragraph, Cummins shall meet all requirements specified in Paragraphs 13 through 20, and 23 through 25, of this Consent Decree throughout the Useful Life of the engine. Compliance by an engine family with the NOx plus NMHC limits prior to Model Year 2004 shall not subject the engine

family to the longer Useful Life requirement promulgated by EPA and published at 62 Fed. Reg. 54694. The specific Useful Life requirements applicable to engines produced before Model Year 2004 shall be as follows:

(a) For Interim Engines manufactured on or before December 31, 1999, the definition of Useful Life contained in 40 C.F.R. Part 86 shall apply for all applicable limits. Cummins shall apply the deterioration factors, if any, developed for the FTP in order to demonstrate compliance with the EURO III and NTE standards. Cummins may increase the applicable EURO III or NTE deterioration factors for the engine family if, after completion of engine testing, deterioration factors applicable to EURO III or NTE Limits are found to be greater than the deterioration factors used to determine compliance with the FTP standards. The EURO III or NTE Limit for such engine family may then be increased by the difference between the FTP factor and the applicable EURO III or NTE factor for the purpose of any in-use determination of compliance. Cummins must generate and submit to EPA with its Model Year 2000 applications for Certificates, data supporting a change in the original deterioration factors, but all such data must be submitted prior to December 31, 1999.

(b) For an HDDE manufactured on or after January 1, 2000, or when Cummins has determined a specific deterioration factor for the EURO III and NTE Limits for a particular engine family,

whichever is sooner, the Useful Life for all such limits under this Consent Decree shall be the Useful Life set forth in 40 C.F.R. Part 86 for HDDEs manufactured before Model Year 2004, with no adjustments when determining in-use compliance.

(c) Beginning with Model Year 2004, the Useful Life for all limits under this Consent Decree shall be the Useful Life set forth in 40 C.F.R. Part 86 for HDDEs manufactured in Model Year 2004 and later.

C. Additional Requirements Applicable to LMB Engines Only

13. Subject to the provisions of this Consent Decree, Cummins shall not employ a Defeat Device in any electronically controlled LMB Engine manufactured on or after November 1, 1998. Notwithstanding the foregoing sentence, and without either Party to this Consent Decree conceding that any such strategy is or is not a Defeat Device, Cummins's LMB Engines that are Interim Engines may employ the injection-timing strategies as described and specified in Appendix B-1 and B-2 to this Consent Decree, provided that, at the time of certification, such engines are in compliance with all requirements of Paragraph 14. These strategies are used: (a) for engine startup; (b) to prevent engine or vehicle damage or accident; (c) to protect the engine from excessive deterioration during sustained high speed or high

load operation; and/or (d) to control emissions of unburned hydrocarbons at low ambient temperatures.

14. For all electronically controlled LMB Engines manufactured on or after November 1, 1998, including the engines specified in Paragraph 13, Cummins shall comply, except as described and specified in Appendix B-2, with the following: (a) all applicable FTP standards when tested in accordance with the FTP for HDDEs; (b) EURO III Composite Value Limits of 6.0 g/bhp-hr for NOx (i.e., 1.5 times the applicable FTP standard for NOx), 1.0 times the applicable FTP standard for all other regulated emissions when tested using the EURO III Test Protocol in accordance with Appendix C of this Decree, and the associated Emissions Surface Limits specified in that Appendix; (c) an NTE limit of 7.0 g/bhp-hr for NOx (i.e., 1.75 times the applicable FTP standard for NOx) in accordance with Appendix C to this Consent Decree; and (d) either a Smoke Limit of 1.0 or a thirty second average smoke opacity of 4% for a 5 inch path limit for transient testing, and a ten second average smoke opacity of 4% for a 5 inch path limit for steady state testing. The foregoing requirements of Subparagraph (b) through (d) shall not apply to up to 400 of Cummins' M11 LMB Engines. For Pickup Engines manufactured prior to January 1, 1999, Cummins's engines may exceed the applicable NTE Limit by no more than 15%, at speeds

above 3,200 RPM, and torque levels between 30% and 65% of maximum torque.

15. Without either Party to this Consent Decree conceding that any such strategy is or is not a Defeat Device: (a) no electronically controlled LMB Engine manufactured by Cummins on or after July 31, 1999, shall employ any of the injection-timing strategies described in Appendix B-1, of this Consent Decree, unless EPA determines that the strategy is not a Defeat Device; but (b) Cummins's electronically controlled LMB Engines manufactured on or after July 31, 1999 and prior to October 1, 2002 may employ the strategies as described and specified in Appendix B-2 and B-3, provided that, at the time of certification, such engines are in compliance with all requirements of Paragraph 16, and provided that beginning in Model Year 2000, Cummins's LMB Engines may employ such strategies only if, at the time of certification, they comply with, or are revised to conform to, the applicable limitations set forth in Appendix B-4.

16. All electronically controlled LMB Engines manufactured on or after July 31, 1999, shall comply, except as described and specified in Appendix B-2 and B-3, and as limited by B-4, with the following: (a) all applicable FTP standards when tested in accordance with the FTP for HDDEs; (b) EURO III Composite Value Limits of 4.0 g/bhp-hr for NOx (i.e., 1.0 times the applicable

FTP standard for NOx), 1.0 times the applicable FTP standard for all other regulated emissions when tested using the EURO III Test Protocol in accordance with Appendix C of this Decree, and the associated Emissions Surface Limits specified in that Appendix; (c) an NTE Limit of 5.0 g/bhp-hr for NOx (i.e., 1.25 times the applicable FTP standard for NOx) in accordance with Appendix C to this Consent Decree; and (d) either a Smoke Limit of 1.0 or a thirty second average smoke opacity of 4% for a 5 inch path limit for transient testing, and a ten second average smoke opacity of 4% for a 5 inch path limit for steady state testing.

17. No LMB Engine manufactured by Cummins on or after October 1, 2002, shall employ any of the injection-timing strategies described in Appendix B-1, B-2, B-3 and B-4 to this Consent Decree, unless EPA determines that the strategy is not a Defeat Device. In addition, all such LMB Engines (whether mechanically or electronically controlled), except for Pickup Engines (which shall continue to comply with the requirements of Paragraphs 15 and 16), shall comply with the following: (a) an FTP Limit of 2.4 g/bhp-hr for NOx plus NMHC, or 2.5 g/bhp-hr for NOx plus NMHC if NMHCs do not exceed 0.5 g/bhp-hr; (b) EURO III Composite Value Limits of 2.4 g/bhp-hr for NOx plus NMHC, or 2.5 g/bhp-hr for NOx plus NMHC if NMHCs do not exceed 0.5 g/bhp-hr (i.e. 1.0 times the applicable NOx plus NMHC Limit), and 1.0 times the applicable FTP standard for all other applicable

emissions when tested using the EURO III Test Protocol in accordance with Appendix C to this Consent Decree; (c) all associated Emissions Surface Limits specified in Appendix C; (d) an NTE Limit of 3.0 g/bhp-hr for NOx plus NMHC, or 3.125 g/bhp-hr for NOx plus NMHC if NMHCs do not exceed 0.6250 g/bhp-hr (i.e., 1.25 times the applicable NOx plus NMHC Limit), in accordance with Appendix C of this Decree; (e) an NTE Limit of 0.1250 g/bhp-hr for PM (i.e., 1.25 times the applicable FTP standard for PM), except the applicable NTE limit for PM for Urban Bus engines shall be 0.06250 g/bhp-hr and 0.08750 g/bhp-hr for in-use testing purposes, in accordance with Appendix C of this Decree; and (f) either a Smoke Limit of 1.0 or a thirty second average smoke opacity of 4% for a 5 inch path limit for transient testing, and a ten second average smoke opacity of 4% for a 5 inch path limit for steady state testing.

D. Additional Requirements Applicable to Truck HHDDEs Only

18. Subject to the provisions of this Consent Decree, Cummins shall not employ a Defeat Device in any electronically controlled Truck HHDDE manufactured on or after December 31, 1998. Notwithstanding the foregoing sentence, and without either Party to this Consent Decree conceding that any such strategy is or is not a Defeat Device, Cummins's Truck HHDDEs that are Interim Engines may employ those injection-timing strategies as

described and specified in Appendix B-1, B-2 and B-3 to this Consent Decree, provided that, at the time of certification, such engines are in compliance with all requirements of Paragraph 19, and provided that beginning in Model Year 2000, Cummins's Truck HHDDEs may employ the strategies as described and specified in Appendix B-1, B-2 and B-3 only if, at the time of certification, they comply with, or are revised to conform to, the applicable limitations set forth in Appendix B-4. These strategies are used: (a) for engine startup; (b) to prevent engine or vehicle damage or accident; (c) to protect the engine from excessive deterioration during sustained high-speed or high load operation; and/or (d) to control emissions of unburned hydrocarbons at low ambient temperatures.

19. In addition, all electronically controlled Truck HHDDEs manufactured on or after December 31, 1998, including engines specified in Paragraph 18, shall comply, except as described and specified in Appendix B-2 and B-3, and as limited by B-4, with the following: (a) all applicable FTP standards when tested in accordance with the FTP for HDDEs; (b) EURO III Composite Value Limits of 6.0 g/bhp-hr for NOx (i.e., 1.5 times the applicable FTP standard for NOx), 1.0 times the applicable FTP standard for all other regulated emissions when tested using the EURO III Test Protocol in accordance with Appendix C of this Decree, and the associated Emissions Surface Limits specified in that Appendix;

(c) an NTE Limit of 7.0 g/bhp-hr for NOx (i.e., 1.75 times the applicable FTP standard for NOx) in accordance with Appendix C to this Consent Decree; and (d) either a Smoke Limit of 1.0 or a thirty second average smoke opacity of 4% for a 5 inch path limit for transient testing, and a ten second average smoke opacity of 4% for a 5 inch path limit for steady state testing.

20. No Truck HHDDE manufactured by Cummins on or after October 1, 2002, shall employ any of the injection-timing strategies described in Appendix B-1, B-2, B-3 and B-4 to this Consent Decree, unless EPA determines that the strategy is not a Defeat Device. In addition, all Truck HHDDEs (whether mechanically or electronically controlled) manufactured on or after October 1, 2002, shall comply with the following: (a) an FTP Limit of 2.4 g/bhp-hr for NOx plus NMHC, or 2.5 g/bhp-hr for NOx plus NMHC if NMHCs do not exceed 0.5 g/bhp-hr; (b) EURO III Composite Value Limits of 2.4 g/bhp-hr for NOx plus NMHC, or 2.5 g/bhp-hr for NOx plus NMHC if NMHCs do not exceed 0.5 g/bhp-hr (i.e., 1.0 times the applicable NOx plus NMHC Limit), and 1.0 times all other applicable regulated emissions when tested using the EURO III Test Protocol in accordance with Appendix C of this Decree; (c) all associated Emissions Surface Limits specified in Appendix C; and (d) an NTE Limit of 3.0 g/bhp-hr for NOx plus NMHC, or 3.125 g/bhp-hr for NOx plus NMHC if NMHCs do not exceed 0.625 g/bhp-hr (i.e., 1.25 times the applicable NOx plus NMHC

Limit), in accordance with Appendix C of this Decree; (e) an NTE Limit of 0.125 g/bhp-hr for PM (i.e., 1.25 times the applicable FTP standard for PM); and (f) either a Smoke Limit of 1.0 or a thirty second average smoke opacity of 4% for a 5 inch path limit for transient testing, and a ten second average smoke opacity of 4% for a 5 inch path limit for steady state testing.

E. Averaging, Banking and Trading

21. Cummins shall have 9,421 NOx credits for HHDDEs and 7,089 NOx credits for MHDDEs from its A,B&T account at the end of Model Year 1997 for use during the 1998 and 1999 Model Years. All other NOx credits in Cummins's A,B&T account at the end of Model Year 1997 shall be deemed void, and Cummins shall not trade such credits or use them to offset emissions at any time in the future. In addition, any of the available credits identified above that are not used by the end of Model Year 1999 shall expire, and Cummins shall not trade such credits to offset emissions at any time after Model Year 1999. Notwithstanding the provisions of Paragraph 23, the use of NOx credits available under this Paragraph by an engine family shall not have any effect on the applicable non-FTP limits under this Consent Decree that must be met by that engine family.

22. Except as specified in Paragraphs 21 through 23, the applicable A,B&T regulations shall apply only to the FTP standards of this Consent Decree.

(a) For purposes of averaging and generating credits, the Family Emissions Limit ("FEL") of the engine family shall be compared to the FTP limit applicable under this Consent Decree.

(b) The A,B&T regulations applicable to Model Year 2004 and later engines shall apply to all engines certified to the NOx plus NMHC Limits.

(c) Credits generated from engines not certified to the NOx plus NMHC Limits may be used in A,B&T for engines not certified to the NOx plus NMHC Limits. Credits generated from engines not certified to the NOx plus NMHC Limits may be used in A,B&T for engines certified to the NOx plus NMHC Limits, but only for engines manufactured on or after January 1, 2003, and only if the credit-generating engines are also certified to a EURO III Composite Value Limit equal to or less than 1.0 times the NOx FEL for such engines.

(d) An HDDE manufactured after October 1, 2002, and before January 1, 2003 may be certified to the 4.0 g/bhp-hr NOx FTP standard only if the manufacturer has previously generated enough engine-credits within the same class of engines (i.e., HHDDE, MHDDE, and LHDDE) to offset the engine-credit used by the engine. Any such engine manufactured prior to October 1, 2002, and

certified to the NOx plus NMHC Limit, with an FEL less than or equal to the NOx plus NMHC Limit shall generate one engine-credit. Any such engine manufactured after October 1, 2002, certified to the 4.0 g/bhp-hr NOx FTP standard shall use one engine-credit. In addition, an engine-credit may only be used for an offset under this Subparagraph if the engine generating the credit was manufactured at least as many days before October 1, 2002, as the engine using the credit was manufactured after October 1, 2002.

(e) A Nonroad CI Engine covered by Paragraph 60 of this Consent Decree and manufactured after January 1, 2005, and before July 1, 2005, may be certified to the emission limits that would otherwise apply to the engine prior to January 1, 2005, only if the manufacturer has previously generated enough engine-credits within the same A,B&T class of engines to offset the engine-credit used by the engine. Any such engine manufactured prior to January 1, 2005, and certified to the emission limits applicable under Paragraph 60, with a FEL less than or equal to such emission limits, shall generate one engine-credit. Any such engine manufactured after January 1, 2005, certified to the emission limits applicable under Paragraph 60 shall use one engine-credit. In addition, an engine-credit may only be used for an offset under this Subparagraph if the engine generating the credit was manufactured at least as many days before January

1, 2005, as the engine using the credit was manufactured after January 1, 2005.

23. Except as specified in Paragraph 21 of this Consent Decree, if Cummins declares a NOx, NOx plus NMHC, or PM FEL for an engine family, then the applicable EURO III, NTE, and TNTE Limits shall be as follows:

(a) the EURO III Composite Value Limits for NOx and PM shall be the applicable multiplier times the NOx and PM FEL. The EURO III Composite Value Limits for NOx plus NMHC shall be the NOx plus NMHC FEL;

(b) the NTE Limits shall be the applicable multiplier times the NOx, PM, and NOx plus NMHC FELs; and

(c) the TNTE Limits shall be 1.7 times the PM FEL and 1.3 times the NOx plus NMHC FEL, unless modified in accordance with Paragraph 25.

F. TNTE Limits

24. On or after October 1, 2002, all HDDEs manufactured by Cummins shall meet the TNTE Limits set forth below, or the alternate limits established pursuant to Paragraph 25, when tested in accordance with the TNTE Test Protocol specified in Appendix C to this Consent Decree. Subject to the provisions of Paragraph 25 of this Consent Decree, the TNTE Limit for NOx plus NMHC shall be 3.12 g/bhp-hr for NOx plus NMHC, or 3.25 g/bhp-hr

for NOx plus NMHC if NMHCs do not exceed 0.65 g/bhp-hr. The TNTE Limit for PM shall be 0.08 g/bhp-hr for Urban Bus engines (0.12 g/bhp-hr for in-use testing purposes) and 0.17 g/bhp-hr for all other heavy-duty diesel engines.

25. Prior to October 1, 2000, EPA and Cummins shall review all TNTE test data submitted to the Agency by Cummins pursuant to Paragraph 26(b) of this Consent Decree, and information on current and anticipated technologies, to determine whether the above TNTE Limits should be modified to ensure that the TNTE Limits are the lowest achievable given the technology available at that time. The Parties agree that the same TNTE Limits should apply to all Settling HDDE Manufacturers, and deliberations regarding the appropriate TNTE Limits should therefore be among EPA (after consultation with CARB) and all Settling HDDE Manufacturers. If EPA and Cummins determine that different TNTE Limits are appropriate, or a different compliance date is appropriate, the Parties shall jointly petition the Court to modify the Consent Decree. If EPA and Cummins disagree on the appropriateness of the TNTE Limits or the compliance date, the matter shall be resolved through the dispute resolution procedures in Section XVI of this Consent Decree, except: (a) any final TNTE Limits determined through mutual consent of the Parties shall be agreed upon only after consultation with, and the agreement of, all Settling HDDE Manufacturers; and (b) the

Parties hereby consent to the consolidation of any judicial dispute resolution proceedings under this Consent Decree with respect to the final TNTE Limits with dispute resolution proceedings regarding the same issue under a Consent Decree with any other Settling HDDE Manufacturer, and to intervention of any Settling HDDE Manufacturer in judicial dispute resolution regarding this issue. Should any Settling HDDE Manufacturer seek judicial dispute resolution regarding the final TNTE Limits, Cummins agrees to be bound by the final TNTE Limits determined by the Court in such proceeding, even if Cummins has not sought judicial dispute resolution regarding this issue.

VII. FEDERAL CERTIFICATION, SELECTIVE ENFORCEMENT AUDITING, ADMINISTRATIVE RECALL, AND RECORD KEEPING AND REPORTING REQUIREMENTS ASSOCIATED WITH THE EURO III, NTE, TNTE, SMOKE (OR ALTERNATE OPACITY) AND NOX PLUS NMHC LIMITS

26. With respect to the EURO III, NTE, TNTE, Smoke (or alternate Opacity) Limits, and NOx plus NMHC Limit, Cummins shall be subject to and comply with all requirements of EPA's regulations and the Act, and shall be entitled to invoke the administrative procedures of EPA's regulations and the Act, that would be applicable if those limits were emission standards and procedures adopted under Sections 202(a)(3) and 206 of the Act, 42 U.S.C. §§ 7521(a)(3) and 7525, including the requirements and procedures relating to certification, warranty, selective enforcement auditing under Section 206(b) of the Act, 42 U.S.C. §

7525(b), administrative recall under Section 207(c) of the Act, 42 U.S.C. § 7541(c), and record keeping and reporting requirements, subject to the following:

(a) Cummins shall comply with all record keeping and reporting requirements associated with certification testing done to demonstrate compliance with the EURO III Composite Value Limit and the NOx plus NMHC Limit found in Paragraph 14, 16, 17, 19, 20, and 23 of this Decree, but need only submit the compliance statements required in Appendix C of this Decree to demonstrate compliance with all other EURO III, NTE, TNTE, and Smoke (or the alternate Opacity) Limits. Cummins shall keep and provide to the United States, within 30 days of a request, all emission test results, engineering analysis, and any other information which formed the basis for making such compliance statements;

(b) beginning with the 1999 Model Year, Cummins shall submit TNTE test results conducted in accordance with Appendix C of this Decree for all of its certification engines as part of its Certificate applications. For applications submitted prior to March 1, 1999, submission of TNTE test results may be delayed until March 1, 1999. TNTE test results shall include the following speeds: the lowest speed in the Not to Exceed Control Area (“ESC”), the 15% ESC speed, the 25% ESC speed (Speed A), the 50% ESC speed (Speed B), the 75% ESC speed (Speed C), and the 100% ESC speed (Speed D);

(c) any dispute arising under or relating to the parties' obligations under this Consent Decree regarding the EURO III, NTE, TNTE, and Smoke (or alternate Opacity) Limits shall not be subject to the provisions of Section 307 of the Act, 42 U.S.C. §7607, but instead shall but be resolved through the dispute resolution procedures in Section XVI of this Consent Decree;

(d) Section 304 of the Act, 42 U.S.C. § 7604, shall not apply to compliance with the EURO III, NTE, TNTE, Smoke (or the alternate Opacity), or the NOx plus NMHC Limits;

(e) For any hearing regarding compliance with the EURO III, NTE, TNTE, Smoke (or alternate Opacity), or the NOx plus NMHC Limits, at which, if they were standards under existing regulations, an administrative law judge would otherwise preside, EPA shall appoint a hearing officer who shall preside at such hearing; and

(f) any SEA testing of engines for conformance with EURO III, NTE, or TNTE Limits shall be conducted consistent with written EPA guidance.

27. Except as provided in Paragraph 26, EPA may exercise any authority under its regulations or the Act, including certification, warranty, selective enforcement auditing under Section 206(b) of the Act, 42 U.S.C. § 7525(b), administrative recall under Section 207(c) of the Act, 42 U.S.C. § 7541(c), and taking enforcement actions under Sections 204 and 205 of the Act,

42 U.S.C. §§ 7523 and 7524, that would be applicable if the EURO III, NTE, TNTE, Smoke (or the alternate Opacity), and the NOx plus NMHC Limits were emissions standards and procedures adopted under Sections 202(a)(3) and 206 of the Act, 42 U.S.C. §§ 7521(a)(3) and 7525.

28. For LMB Engines and Truck HHDDEs that are Interim Engines, EPA agrees not to deny, suspend, withdraw, or revoke a Certificate of Conformity under the terms of 40 C.F.R. Part 86 on the grounds that an engine or engines contain one or more of the strategies specifically described in the applicable portions of Appendix B-1 through B-4 to this Consent Decree.

29. Beginning with Model Year 1999, with respect to any EURO III, NTE, TNTE, Smoke (or the alternate Opacity), or NOx plus NMHC Limit that becomes more stringent before the end of a Model Year, any Certificate of Conformity for that Model Year issued prior to the date the limits change shall cover only those engines manufactured before the date the limits become more stringent. Beginning with Model Year 1999, Cummins shall apply for a new Certificate to cover any engine it intends to manufacture and sell, or offer for sale, for the rest of the Model Year by submitting information sufficient to show that the engines will comply with the more stringent limits. Cummins shall have the option of satisfying the requirements of this Paragraph by designating engines as the following Model Year.

30. Except as specifically provided herein, this Decree does not modify, change, or limit in any way the rights and obligations of the Parties under the Act and EPA's regulations with respect to the control of emissions from HDDEs.

VIII. COMPLIANCE AUDITING AND IN-USE TESTING

A. Compliance Auditor

31. Within 120 days of the entry of this Decree, Cummins shall designate and provide to the United States, subject to the United States' disapproval, the name, current employment position, and qualifications of a Compliance Auditor responsible for auditing Cummins's progress in meeting the requirements of this Decree. The Compliance Auditor proposed by Cummins shall be deemed approved by the United States unless disapproved within 30 days of the date when the information described in the preceding sentence is provided by Cummins. Should the United States disapprove a proposed Compliance Auditor, Cummins shall designate and provide to the United States the name, current position, and qualifications of an alternative Compliance Auditor within 20 days of the notice of disapproval. Any dispute regarding the United States' disapproval of any proposed Compliance Auditor shall be resolved through the dispute resolution procedures of Section XVI of this Consent Decree. Any successor to the

Compliance Auditor must also be approved in accordance with the procedure set forth in this Paragraph.

32. The Compliance Auditor: (a) shall be an employee of Cummins; (b) shall have not less than ten years of practical experience in diesel engine design and/or manufacturing; (c) shall not have any direct responsibility for Cummins's development of engines or technology to comply with the requirements of this Consent Decree; (d) shall not report to or be supervised by anyone below the level of the Chief Executive Officer ("CEO") having any responsibility for Cummins's development of engines or technology to comply with the requirements of this Consent Decree; and (e) shall spend a minimum of 500 hours per year through compliance with the certification requirements of Paragraphs 17 and 20, at which time the minimum hours shall be reduced to 100 hours per year, fulfilling the duties described herein. In addition, with respect to the performance of the compliance auditing requirements of this Consent Decree, the Compliance Auditor shall report directly to the CEO for the purpose of carrying out the provisions of this Section, and shall provide copies of all reports required by this Section directly to the CEO. The Compliance Auditor shall execute his or her responsibilities under this Consent Decree in a manner consistent with the relevant provisions of the Institute of Internal Auditors'

Codification of Standards for the Professional Practice of Internal Auditing.

33. Cummins's Compliance Auditor shall be responsible for auditing Cummins's progress in developing and implementing the technology needed to meet the EURO III, NTE, TNTE, Smoke (or alternate Opacity), and the NOx plus NMHC Limits. The Compliance Auditor shall also be responsible for auditing Cummins's progress in developing and implementing technology needed to meet the Low NOx Rebuild and Nonroad CI Engine standard pull-ahead requirements specified in Paragraphs 60 and 64 of this Decree.

34. Cummins shall make available to the Compliance Auditor all of Cummins's records, except for privileged attorney-client communications, and all records of any contractor utilized by Cummins to assist in the development and implementation of technology needed to meet the requirements specified in this Decree. These records shall include, but not be limited to, records pertaining or relating to decisions to pursue or to abandon potentially available technologies or strategies, and the level of funding requested, budgeted, or provided, to achieve compliance with this Consent Decree. Cummins shall provide the Compliance Auditor with access to any facility where requisite technology is being developed, tested, or implemented. Cummins shall also provide all reasonable assistance to allow the Compliance Auditor to monitor Cummins's progress in meeting the

requirements, including: making employees or contractors available to answer questions, to provide updates, and to discuss next steps; and providing a running total of all monies spent in developing and implementing the requisite technology. Cummins does not waive, and specifically reserves, all privileges applicable to information provided to the Compliance Auditor.

35. The Compliance Auditor shall submit quarterly reports to the United States and to the CEO providing his or her independent, unreviewed assessment and analysis of: Cummins's progress in developing and implementing the requisite technology; the likelihood of Cummins's meeting the compliance schedules set forth in this Decree; the adequacy and sufficiency of the resources being provided by Cummins for the purposes of this Decree; and the needed measures beyond those being taken by Cummins so as to ensure compliance with the requirements of this Decree. The Compliance Auditor's assessment and analysis shall be supported with citations to relevant documents, test results, discussions with company officials, and other sources regarding Cummins's progress in meeting the requirements of this Decree. Any statements of the Compliance Auditor shall be deemed to be his or her own personal opinions and shall be neither binding on, nor admissions of, Cummins with regard to any issue. Prior to any public release of a report by the Compliance Auditor, or its contents, the United States shall provide Cummins with an

opportunity to designate all or part thereof as confidential business information in accordance with 40 C.F.R. Part 2. In addition, the quarterly reports shall include the following:

(a) a summary of the relevant technologies being developed by Cummins;

(b) the names and addresses of any contractor being used by Cummins to develop the relevant technology and a summary of what tasks the contractor has been hired to perform;

(c) a summary of the developmental work done over the last three months by Cummins or any such contractor hired by Cummins;

(d) a summary of any testing done by Cummins with respect to any relevant technology being developed, including all significant test results pertinent to Cummins's progress in meeting the requirements of this Decree;

(e) a summary of Cummins's activities over the previous three months regarding the implementation of any relevant technology needed to meet the requirements of this Decree, including developmental work done on secondary components such as the radiators to accommodate NOx reduction technologies, coordination with truck builders to accommodate engine changes, and the development of supply contracts;

(f) an accounting of the money and resources expended by Cummins over the previous quarter to develop and implement relevant technology;

(g) the budget for, and summary of, all relevant activities expected to take place in the next quarter; and

(h) the Compliance Auditor's statement or opinion regarding the need to modify Cummins's development and implementation plan, including next steps that may be necessary to achieve compliance with the schedules set out in this Decree.

36. The first report pursuant to Paragraph 35 shall be submitted to the United States within 180 days following the Date of Entry and shall include all of the above information with respect to all activities undertaken by Cummins up to the time of the first report, including activities predating entry of this Decree, if any. Subsequent reports shall be provided within 30 days after the close of each calendar quarter, commencing with the first full quarter following the initial report, and shall provide the information described above with respect to the quarter covered by the report. Upon reasonable notice, the Compliance Auditor shall also be available to answer oral and written questions from the United States regarding the activities of Cummins in meeting the requirements of this Decree. Any statements of the Compliance Auditor shall be deemed to be his or her own personal opinions and shall be neither binding on, nor admissions of, Cummins with regard to any issue.

37. Attorneys for Cummins may be present during any communication between the government and the Compliance Auditor

where the government is represented by an attorney or an EPA Office of Enforcement and Compliance Assurance staff person.

B. In-Use Testing Program

38. Cummins shall perform, by itself or in conjunction with other Settling HDDE Manufacturers, an In-Use Testing Program to ensure diesel engines manufactured or modified by Cummins meet the requirements of this Consent Decree when driven under conditions which can reasonably be expected to be encountered during normal vehicle operation and use, and to evaluate the effectiveness of modifications to engine design made in response to the requirements of this Consent Decree in reducing emissions. Specifically, Cummins shall conduct testing to assess in-use mobile monitoring technologies, establish calibration and operating procedures for selected monitoring technologies, establish a baseline emission characterization, and conduct on-road testing to monitor in-use compliance on representative HDDEs manufactured by Cummins. This Program shall be conducted in four phases. Cummins is obligated to spend the sum of $2,000,000 on the In-Use Testing Program, allocated in accordance with the percentages set forth below.

39. Should Cummins elect to perform the In-Use Testing Program, or any phase thereof, in conjunction with other Settling HDDE Manufacturers, the references in Paragraphs 38 through 59 to

Cummins shall refer to Cummins and all other Settling HDDE Manufacturers who elect to perform the obligations of Paragraphs 38 through 59 jointly, but the amount Cummins itself is required to spend on the In-Use Testing Program shall not be changed by such election. In the event Cummins elects to perform any of the obligations of Paragraphs 38 through 59 jointly with any other Settling HDDE Manufacturer(s), it shall so notify the United States in the Scope of Work for each Phase of the Program to be implemented jointly, and provide the names of the other Settling HDDE Manufacturers with whom Cummins is going to perform the work. If Cummins elects to perform any obligation under Paragraphs 38 through 59 with other Settling HDDE Manufacturers, Cummins shall remain obligated to fulfill all of the requirements of Paragraphs 38 through 59, and shall be liable for stipulated penalties pursuant to Paragraph 116 for any failure to the same extent as if the obligation were undertaken solely by Cummins.

40. In Phase I, Cummins shall conduct engineering studies to determine the correlation, accuracy, precision, and repeatability of existing mobile monitoring technologies. The purpose of the engineering studies is to assess the technology or technologies in terms of their ability to provide accurate data regarding the mass of regulated gaseous emissions and actual engine torque, so this information can be incorporated in the use of mobile monitoring equipment for the on-road testing required under

Phases III and IV. Phase I shall also include engineering studies to determine the highest degree of accuracy and precision of reported engine output torque achievable consistent with good engineering practices.

41. Not later than January 1, 1999, Cummins shall submit to the United States and CARB, for review and approval by each, a single Scope of Work for Phase I. The Scope of Work shall identify the mobile monitoring technology(ies) to be evaluated, the procedures for evaluating in-use monitoring equipment, the facility that will conduct the evaluation, the companies that will participate in the program, and the schedules for implementing those tasks.

42. Within thirty (30) days after submission of the proposed Scope of Work, the United States shall approve the Scope of Work or propose modifications. Within 10 days following EPA's proposed modifications Cummins shall incorporate the proposed modifications; but, if Cummins disputes the proposed modifications, or if the modifications requested by the United States conflict with modifications requested by CARB, the dispute shall be governed by the dispute resolution provisions of Section XVI. The work set forth in the Scope of Work, as approved, shall be completed by September 1, 1999.

43. If, prior to the conclusion of Phase I, Cummins believes the expenditure of additional funds in excess of the amount allotted under the Scope of Work would materially improve the capabilities of the mobile monitoring equipment, it may petition the United States to increase the percentage of Cummins's obligation allocated to Phase I. The United States reserves the right to disapprove such a request, and any denial of such a request shall not be subject to dispute resolution.

44. Cummins shall include in the quarterly reports submitted pursuant to Paragraph 105 a description of the progress of testing under Phase I, and shall submit a final report within 30 days of the completion of the work, summarizing the study, and including all test data and other information not previously provided with the periodic reports.

45. Cummins shall submit to the United States, within 60 days of the completion of the work under Phase I, a description of its proposed monitoring equipment for use in Phases III and IV. Such report shall include any modification to improve its correlation, accuracy, precision, and repeatability, which Cummins proposes should be incorporated into the proposed monitoring equipment. The United States shall review and approve or disapprove the proposed modifications within 30 days. Any

disapproval of a proposed modification shall not be subject to dispute resolution.

46. Cummins shall implement any approved or agreed-upon improvement to the in-use monitoring equipment approved pursuant to Phase I by February 1, 2000. The cost of any such modification relating to improving the accuracy and precision of reported engine output torque shall be borne by Cummins and shall not be deducted from the amount Cummins is obligated to spend in accordance with Paragraph 38 and 83. The cost of any other approved modification, and the cost of procuring the equipment for the Phases III and IV studies, shall be considered to be part of the amount Cummins is obligated to spend in accordance with either Paragraph 38 or 83 or both, to be determined by the United States in its unreviewable discretion.

47. Cummins may not avoid its obligation to do testing under Phases III and IV on the basis of any claimed inadequacy in mobile monitoring technology. Notwithstanding the foregoing sentence, nothing herein shall constitute a waiver of rights any Party may have under applicable principles of law with respect to the use of test results in any proceeding to enforce this Consent Decree or the Act.

48. In Phase II of the In-Use Testing Program, Cummins shall develop in-use testing procedures to be used in connection

with Phases III and IV of the In-Use Testing Program. The development of in-use testing procedures shall be based on testing of HDDEs engaged in a variety of typical on-road missions, and in a variety of seasonal conditions, and shall utilize engines extending over various stages of their Useful Life. The testing procedures shall include the identification of candidate driving routes representing typical urban, suburban, and highway driving. The candidate routes shall be of sufficient length to take 45 minutes when driven at posted speeds. At least one (1) candidate driving route shall include a portion where at least 15 minutes of operation at 65 mph or greater is permitted and generally attained by trucks.

49. Not later than March 1, 1999, Cummins shall submit to the United States and CARB, for review and approval by each, a single Scope of Work for Phase II, identifying the testing procedures for in-use monitoring equipment and driving routes to be evaluated during Phase II. Within thirty (30) days after submission of the proposed Scope of Work, the United States shall approve the Scope of Work or propose modifications. Cummins shall incorporate the proposed modifications within 30 days of receiving the proposed modifications; but, if Cummins disputes the proposed modifications, or if the modifications requested by the United States conflict with modifications requested by CARB,

the dispute shall be governed by the dispute resolution provisions of Section XVI. Cummins shall implement the Plan as approved.

50. Cummins shall complete Phase II no later than November 1, 1999.

51. Cummins shall submit to the United States and CARB, no later than 30 days after completion of Phase II, a single report that includes a summary of all test data, recommended test procedures, and identification of candidate driving routes for use in Phases III and IV. Within thirty (30) days after submission of the report, the United States shall approve the report or propose modifications. Cummins shall incorporate the proposed modifications; but, if Cummins disputes the proposed modifications, or if the modifications requested by the United States conflict with modifications requested by CARB, the dispute shall be governed by the dispute resolution provisions of Section XVI. The report, as approved, shall form the basis for the testing which Cummins shall conduct in Phases III and IV.

52. Cummins shall spend no more than 20% of the amount set forth in Paragraph 38 on Phases I and II.

53. In Phase III Cummins shall conduct emissions testing on a variety of its in-service diesel engines to characterize real world emissions from such diesel engines. The purpose of this

testing is to establish a baseline set of emission data on a wide range of in-use engines of varying age and service characteristics in order to demonstrate the effectiveness of the changes made to engines produced or modified in accordance with the Consent Decree. The focus of this testing shall be 1988 through 1998 Model Year engines, and shall include a mix of on-road and laboratory testing.

54. Cummins shall submit to the United States and CARB, for review and approval by each, a single Scope of Work for Phase III no later than November 1, 1999. The Scope of Work shall identify the proposed engines to be tested, the test schedule, and any testing routes or facilities. Within thirty (30) days after submission of the proposed Scope of Work, the United States shall approve the Scope of Work or propose modifications. Cummins shall incorporate the proposed modifications within 30 days of receiving the proposed modifications; but, if Cummins disputes the proposed modifications, or if the modifications requested by the United States conflict with modifications requested by CARB, the dispute shall be governed by the dispute resolution provisions of Section XVI. Cummins shall implement the Scope of Work as approved.

55. Not later than February 1, 2000, or, if EPA agrees, one month after the improvements to the in-use monitoring equipment

are implemented, Cummins shall commence testing for Phase III. Testing data shall be reported quarterly throughout Phase III.

56. Cummins shall complete Phase III eight months after commencement, and shall submit to the United States a report describing tests as performed, test conditions, engines tested, and test results. Cummins shall spend no more than 20% of the amount set forth in Paragraph 38 on Phase III.

57. In Phase IV, Cummins shall conduct on-road compliance monitoring on its HDDEs using the monitoring technology and previously defined testing procedures and driving routes approved pursuant to Phases I and II, until the funds set forth in Paragraph 38 have been fully expended. In addition to using the previously defined testing procedures and driving routes, Cummins shall follow the vehicle selection procedures and data reporting requirements set forth in Appendix D.

58. Cummins shall submit to the United States and CARB, for review and approval by each, a single proposed Scope of Work for Phase IV consistent with Appendix D no later than November 1, 1999. The Scope of Work shall include an itemized cost estimate of the testing identified in Appendix D and shall require testing to begin with Model Year 2000 HDDEs. Within thirty (30) days after submission of the proposed Scope of Work, the United States shall approve the Scope of Work or propose modifications. Cummins

shall incorporate the proposed modifications within 30 days of receiving the proposed modifications; but, if Cummins disputes the proposed modifications, or if the modifications requested by the United States conflict with modifications requested by CARB, the dispute shall be governed by the dispute resolution provisions of Section XVI. Cummins shall implement the Scope of Work as approved. Testing data shall be reported monthly throughout Phase IV.

59. Cummins shall submit to the United States quarterly Phase IV reports which include the amount of money spent on testing required by this Paragraph. If, at any time, Cummins contends it cannot complete the required testing with the funds remaining, it shall notify the United States, provide a detailed explanation of the reasons it cannot complete the required testing with the remaining funds, and propose modifications to the Phase IV Scope of Work to conform the remaining testing obligation to the available funds. Within thirty (30) days after submission of the proposed modifications, the United States shall approve Cummins's proposed modifications or propose its own modifications. Cummins shall incorporate the proposed modifications within 30 days of receiving the proposed modifications; but, if Cummins disputes the proposed modifications, or if the modifications requested by the United

States conflict with modifications requested by CARB, the dispute shall be governed by the dispute resolution provisions of Section XVI. Cummins shall implement the modified Scope of Work as approved, but in no event shall Cummins be obligated to spend more than the amount specified in Paragraph 38.

IX. ADDITIONAL INJUNCTIVE RELIEF

A. Nonroad CI Engine Emissions Standard Pull-Ahead

60. All Nonroad CI Engines manufactured by Cummins on or after January 1, 2005, with a horsepower equal to or greater than 300 but less than 750 shall meet 3.0 g/bhp-hr for NOx plus NMHC when measured on the applicable FTP for those engines. In addition, all Nonroad CI Engines manufactured (by company name) on or after January 1, 2005, with a horsepower equal to or greater than 300 but less than 750 shall comply with all other requirements that would apply as if the engines were Model Year 2006 engines. The standards set forth in this Paragraph shall be met throughout the Useful Life of the engine.

61. With respect to the limits specified in Paragraph 60 of this Decree, Cummins shall be subject to and comply with all requirements of 40 C.F.R. Part 89 and of the Act, and shall be entitled to invoke the administrative procedures of EPA's regulations and the Act that would be applicable if those limits

were emission standards and procedures adopted under Sections 202(a)(3) and 206 of the Act, 42 U.S.C. §§ 7521(a)(3) and 7525, including all certification, warranty, selective enforcement auditing under Section 206(b) of the Act, administrative recall under Section 207(c) of the Act, 42 U.S.C. § 7541(c), and record keeping and reporting requirements, except as follows:

(a) any dispute arising under or relating to the parties' obligations under this Consent Decree regarding such limits shall not be subject to the provisions of Section 307 of the Act, 42 U.S.C. §7607, but instead shall be resolved through the dispute resolution procedures in Section XVI of this Consent Decree;

(b) Section 304 of the Act does not apply to compliance with the requirements of Paragraph 60 of this Decree; and

(c) For hearings regarding compliance with Paragraph 60 of this Decree, EPA shall appoint a hearing officer who shall preside at any hearing at which an administrative law judge would preside if the standards were in effect in Model Year 2005.

62. EPA may exercise any authority under its regulations found at 40 C.F.R. Part 89 or under the Act, including certification, selective enforcement auditing, administrative recall, and taking enforcement action against prohibited acts that would be applicable if the limits specified in Paragraph 60

of this Decree were emissions standards and procedures adopted under Section 213 of the Act.

63. Except as specified, this Decree does not modify, change, or limit in any way the rights and obligations of the Parties under the Act and EPA's regulations with respect to the control of emissions from Nonroad CI Engines.

B. Low NOx Rebuild Program

64. Cummins shall implement, in accordance with this Section, a program to reduce NOx emissions from Cummins's Low NOx Rebuild Engines (as defined below) through certain software and/or minor hardware changes made to the engines through the use of a Low NOx Rebuild Kit. The term "Low NOx Rebuild Engines" means: Cummins's Model Year 1994 and later MHDDE and HHDDE Pre-Settlement Engines if Cummins elects Option A below; or Model Year 1993 and later MHDDE and HHDDE Pre-Settlement Engines if Cummins elects Option B below, but shall exclude, in either case, Cummins's low-volume ratings representing not more than 10% in the aggregate of the total volume of MHDDE and HHDDE Pre-Settlement Engines manufactured during the applicable Model Years to avoid requiring unique calibrations or other modifications for such ratings where it would be unduly burdensome in relationship to the number of engines involved and the expected emission

reductions. Low NOx Rebuild Engines do not include engines in the following Cummins' engine families: 403M (WCEXHO359BAG) CPL 2024, 2098, 2512 and 2513; and 403N (WCEXHO359BAH), CPL 2279, 2280, 2514, and 2515.

65. Within 90 days of the Date of Filing, Cummins shall submit to the United States and CARB, for review and approval by each, a single plan for the implementation of its Low NOx Engine Rebuild Program. Each Low NOx Rebuild Kit designed and developed by Cummins shall meet the emission limits under either Option A or Option B:

Option A:

for MHDDEs only:

(a) EURO III Composite Value Limits for NOx of 6.0 g/bhp-hr for Model Years 1994-1998 engines, 1.0 times the applicable FTP standard for all other regulated pollutants when tested on the EURO III Test Protocol in accordance with Appendix C of this Decree, and the associated Emissions Surface Limits specified in that Appendix;

(b) an NTE Limit for NOx of 7.5 g/bhp-hr for Model Years 1994-1998 engines.

for HHDDEs only:

(c) EURO III Composite Value Limits for NOx of 7.0 g/bhp-hr for Model Years 1994-1998 engines, 1.0 times the applicable FTP standard for all other regulated pollutants when tested on the EURO III Test Protocol in accordance with Appendix C of this Decree, and the associated Emissions Surface Limits specified in that Appendix; and

(d) an NTE Limit for NOx of 8.75 g/bhp-hr for Model Years 1994-1998 engines.

Option B:

for *MHDDEs* only:

(a) EURO III Composite Value Limits for NOx of 6.5 g/bhp-hr for Model Years 1993-1998 engines, 1.0 time the applicable FTP standard for all other regulated pollutants when tested on the EURO III Test Protocol in accordance with Appendix C of this Decree, and the associated Emissions Surface Limits specified in that Appendix;

(b) an NTE Limit for NOx of 8.1 g/bhp-hr for Model Year 1993-1998 engines.

for HHDDEs only:

(c) EURO III Composite Value Limits for NOx of 7.5 g/bhp-hr for Model Year 1993-1998 engines, 1.0 times

the applicable FTP standard for all other regulated pollutants when tested on the EURO III Test Protocol in accordance with Appendix C of this Decree, and the associated Emissions Surface Limits specified in that Appendix; and

(d) an NTE Limit for NOx of 9.38 g/bhp-hr for Model Year 1993-1998 engines.

66. If, prior to or after submission of a plan pursuant to Paragraph 65, Cummins determines that it cannot meet the applicable limits specified in Paragraph 65 for any HDDE individual engine rating (referred to in this Paragraph as a "subject rating") with software and/or minor hardware changes, it shall submit to the United States and CARB for review and approval by each a single alternative or revised Low NOx Rebuild Plan in accordance with this Paragraph. The alternative or revised plan shall state the NOx emissions that it proposes to achieve for each subject rating and shall describe how Cummins will offset a NOx emission limit higher than the limits in Paragraph 65 within the same class of engines subject to the Low NOx Rebuild Program. Cummins may elect to use a production-weighted average approach within the applicable HDDE class (i.e., HHDDE or MHDDE) to demonstrate compliance with the applicable limit specified in Paragraph 65. The NOx production-weighted

average shall be calculated by multiplying the NOx emission level that will be achieved for each rating through the use of the appropriate Low NOx Rebuild Kit by the production volume for the rating, summing those terms, and dividing by the total production Low NOx Rebuild Engines. Cummins's alternative or revised plan submitted pursuant to this Paragraph shall demonstrate that Cummins's Low NOx Rebuild Kits would, on a production-weighted NOx average basis, achieve the applicable limits specified in Paragraph 65. As an alternative, if Cummins contends that any individual rating cannot meet the applicable limits, it may elect to increase the quantity of engines included in the Low NOx Rebuild Program by including portions of earlier Model Year engine families, such that the product of the quantity of additional engines and associated NOx reduction shall be equivalent to the product of the quantity of engines for the subject rating from the original Low NOx Rebuild Plan and the NOx exceedance for that rating.

67. In addition to software and minor hardware needed to meet the requirements specified in Paragraph 65, all Low NOx Rebuild Kits shall include a label meeting the requirements of Paragraph 77.

68. Cummins shall make available Low NOx Rebuild Kits for distribution and sale for Low NOx Rebuild Engines according to the following schedule:

i. Beginning 180 days after entry of this Consent Decree, or 90 days following EPA's approval of the Low NOx Rebuild Plan required in Paragraph 65, whichever is later, Cummins shall begin supplying Low NOx Rebuild Kits.

ii. Within 90 days following the applicable date in Paragraph 68(i), Cummins shall make available Low NOx Rebuild Kits in quantities necessary to meet expected demand for engine families representing at least fifty percent of the engines for which Low NOx Rebuild Kits must be produced under the Low NOx Rebuild Plan.

iii. Within 360 days following the applicable date in Paragraph 68(i), Cummins shall make available Low NOx Rebuild Kits in quantities necessary to meet expected demand for all engine families for which Low NOx Rebuild Kits must be produced under the Low NOx Rebuild Plan.

69. Beginning on the date a Low NOx Rebuild Kit is available for any engine family under Paragraph 68, Cummins shall sell and use, and authorize the sale and use of, only Low NOx Rebuild Kits for any Low NOx Rebuild Engine in that family in the case of any Engine Rebuild for:

(a) any HHDDE that has accumulated mileage greater than 290,000 miles, or any MHDDE that has accumulated mileage greater than 185,000 miles; or

(b) any HHDDE or MHDDE that has accumulated less than the applicable mileage specified in Paragraph 69(a), where the service event includes replacement or reconditioning of more than one Major Cylinder Component in all of the engine's cylinders.

70. A Low NOx Rebuild Kit may not increase any regulated emission beyond applicable limits when tested on the FTP.

71. Cummins shall install, and shall authorize its authorized dealers, distributors, repair facilities, and rebuild facilities to install only Low NOx Rebuild Kits as required under Paragraph 64 at no added cost to the owner above the amount the owner would otherwise pay to have the engine rebuilt or repaired. In addition, subject to the provisions of Paragraph 72, Cummins shall make available, either directly or through its affiliated distribution networks, at no added cost, the appropriate Low NOx Rebuild Kit to any non-affiliated engine rebuilder or person who requests it. For the purposes of this Section, "at no added cost" shall mean:

(a) if a Low NOx Rebuild Kit contains parts normally replaced at engine rebuild, Cummins shall not charge more than the then-current price for the original part; and

(b) if a Low NOx Rebuild Kit requires a part not normally replaced during rebuild, then such part shall be included without charge. Cummins shall make arrangements to reimburse its authorized dealers, distributors, repair facilities, and rebuild facilities, so that the ultimate purchaser of a Low NOx Rebuild Kit will not be charged for any required reprogramming through its authorized dealers, distributors, repair facilities, and rebuild facilities, including any computer connection fees.

72. Notwithstanding the provisions in Paragraph 71, Cummins, its authorized dealers, distributors, repair facilities, and rebuild facilities may impose an additional fee for engine control software that includes both the low NOx reprogramming and other software enhancements for purposes unrelated to reducing NOx emissions, provided that:

(a) The customer is given the option of obtaining Low NOx Rebuild reprogramming alone at no cost; and

(b) The customer chooses the option that includes such other software enhancements.

73. Each Low NOx Rebuild Kit shall be clearly marked with an identifiable characteristic allowing the United States to determine whether a Low NOx Rebuild Engine has been rebuilt with the appropriate Low NOx Rebuild Kit. This identifiable characteristic may be a unique part number or other marking on

the engine control module, or may be a readily accessible software identification parameter, including engine code marker or calibration marker.

74. Cummins shall take all reasonable steps to inform its authorized dealers, distributors, repair facilities, and rebuild facilities about the requirements of this program and the availability of Low NOx Rebuild Kits, including, but not limited to, sending written notification to these entities within 120 days after Cummins's Low NOx Rebuild Plan is approved.

75. In addition to any requirement set forth above:

(a) Cummins shall include as part of its Low NOx Rebuild Plan, submitted under Paragraph 65, the following:

(i) A description of each engine family to be covered by a Low NOx Rebuild Kit, including the Model Year, model, and such other information as may be required to identify the engines to be rebuilt with Low NOx Rebuild Kits, and any engine rating otherwise covered by the Low NOx Rebuild Program which Cummins has elected to exclude under the ten percent exclusion for low-volume ratings.

(ii) A list of all Cummins's authorized dealers, distributors, repair facilities, and rebuild facilities who will install the Low NOx Rebuild Kits, and a statement that these

persons will be properly equipped and instructed to install such kits.

(iii) A description of the procedure to be followed by non-affiliated engine rebuild facilities or persons to obtain Low NOx Rebuild Kits.

(iv) A description of the system by which Cummins will ensure an adequate number of Low NOx Rebuild Kits will be available to be installed by affiliated and non-affiliated engine rebuild facilities, including the method to be used to ensure the supply of Low NOx Rebuild Kits remains both adequate and responsive to engine rebuild facilities' demand.

(v) An example of the written notification to be sent to all of Cummins's authorized dealers, distributors, repair facilities, or rebuild facilities.

(b) Cummins shall submit to EPA, 30 days prior to the date any Low NOx Rebuild Kit will be made available, the following additional information:

(i) A statement of the NOx limits each Low NOx Rebuild Kit achieves, and a certification that these limits meet the limits applicable under Paragraph 65, or, if Cummins asserts such limits cannot be achieved, the submissions required under Paragraph 66.

(ii) A copy of all necessary instructions to be sent to those persons who are to install Low NOx Rebuild Kit. This shall include designation of the date on or after which the Low NOx Rebuild Kits will be available from Cummins and the time reasonably necessary to perform the labor required to install the kits.

(iii) A description of the impact of the proposed changes on fuel consumption, driveability, and safety for each class or category of Low NOx Rebuild Engines and a brief summary of the data, technical studies, or engineering evaluations which support these conclusions.

76. The written notification to be sent to all Cummins's authorized dealers, distributors, repair facilities, and rebuild facilities shall contain the following:

(a) A copy of EPA's letter to rebuild facilities regarding the use of Low NOx Rebuild Kits.

(b) A clear description of actions that will be taken in the rebuild and an identification of the components that are affected by the Low NOx Rebuild.

(c) A description of the procedures which non-affiliated engine rebuilders should follow to obtain appropriate Low NOx Rebuild Kits and the time reasonably necessary to perform the labor required to install the appropriate Low NOx Rebuild Kit.

77. The Plan for Cummins's Low NOx Rebuild Program submitted to the United States shall provide that any of Cummins's authorized dealers, distributors, repair facilities, or rebuilders who install a Low NOx Rebuild Kit shall be instructed to complete and affix a label to the engine. The label shall contain a statement with appropriate blank spaces for the rebuilder to indicate when and by whom the Low NOx Rebuild Kit was installed on the engine. The label shall be placed in such location as approved by EPA consistent with State law and shall be fabricated of a material suitable for the location in which it is installed and not readily removable intact. Cummins shall also provide such label to any non-affiliated engine rebuilder who installs one of its Low NOx Rebuild Kits and instructions on how to complete the label and where to affix the label.

78. The United States (after consultation with CARB) shall provide Cummins with notice of approval or disapproval of its Low NOx Rebuild Plan within 30 days of its submittal to the United States. If the plan is disapproved, the United States shall provide the reasons for disapproval, and Cummins shall have 30 days to submit a revised Low NOx Rebuild Plan for approval. Any dispute between the Parties regarding the Low NOx Rebuild Plan shall be resolved in accordance with the dispute resolution provisions of Section XVI of this Decree (including circumstances

where modifications requested by the United States conflict with modifications requested by CARB). Cummins shall implement the Plan as approved.

79. Cummins shall send to the United States a copy of all written communications directed to 5 or more persons which relate to the Low NOx Rebuild Plan directed by Cummins to engine rebuilders and other persons who are to install Low NOx Rebuild Kits under the Low NOx Rebuild Plan. Such copies shall be mailed to the United States contemporaneously with their first transmission to engine rebuilders and other persons who are to install Low NOx Rebuild Kits under the Low NOx Rebuild Plan.

80. Cummins shall provide for the establishment and maintenance of records to enable the Parties to monitor the implementation of the Low NOx Rebuild Program. The records shall include the following:

(a) the number of engines that will be subject to Low NOx Rebuild; and

(b) a cumulative total of the number of Low NOx Rebuild Kits sold, by part number.

81. Cummins shall maintain in a form suitable for inspection, such as computer information storage devices or card files, lists of the names and addresses of engine rebuilders who were provided Low NOx Rebuild Kits and the number of kits

provided. The records described in this Paragraph shall be made available to the United States upon request.

82. The records required by this Section shall be retained in accordance with the provisions of Paragraph 142 (Record Retention) of this Consent Decree. Cummins's obligations under Section IX.B shall terminate ten (10) years from the date of introduction of the first Low NOx Rebuild Kit pursuant to Paragraph 68(i). Cummins accepts as a condition of such termination that, after termination, Cummins will only make available for Engine Rebuilds on Low NOx Rebuild Engines the software and/or minor hardware that corresponds to the Low NOx Rebuild Kit described in Paragraphs 64 through 67 and that complies with Paragraphs 70 and 73.

C. Additional Injunctive Relief/Offset Projects

83. As further injunctive relief, Cummins shall implement or perform, in accordance with the provisions of this Section, projects to reduce the amount of NOx emitted into the environment nationwide from mobile and stationary sources. Subject to the provisions of Paragraph 84, Cummins shall be obligated to spend $35,000,000 for performance of these projects. Cummins shall augment the above amount by $10,400 for each tenth of a percentage point that the recapture rate for the campaign described in Paragraph 101(a)-(q) is below 70 percent. Cummins’

proposed Scope of Work under Paragraph 86 shall specify which projects shall be augmented in the event that it is required to augment the total amount of money to be spent on Company Proposed Projects (defined below.) The recapture rate shall be determined by dividing the number of Campaign Engines that have been modified at the end of the six quarter period from the mailing of the initial owner notification letters by the simple average of the number of Campaign Engines that were subject to the campaign on October 1, 1998 and the close of the six quarter period, as evidenced by data obtained by Cummins from R.L. Polk and Co. (or a comparably reliable third party source, if R.L. Polk data is not available.) The recapture rate shall be calculated to two decimal points and rounded to one decimal point, using the rounding procedures set forth in ASTM E 29-67 (Reapproved in 1980) (cited in 40 CFR 86.088-28(a)(4)(i)(B)) and shall be reported to the United States in a recapture rate determination report within 90 days of the close of the six-quarter period for the campaign.

84. Cummins may satisfy up to $10,000,000 of its obligation under Paragraph 83 through projects (referred to below as “Incentive Projects”) to achieve verifiable reductions in NOx emissions from HDDEs manufactured by Cummins, beyond those required by law or by other provisions of this Consent Decree, up

to 220,000 tons of NOx. For example, Cummins may satisfy a portion of its offset obligation under Paragraph 83 by reducing emissions from Pre-Settlement Engines, other than Low NOx Rebuild Engines, with the vehicle owners' consent, at the time the engines are brought in for service. Any emission reductions used in the Incentive Projects shall not be used to satisfy any other Consent Decree obligations or in the A,B&T program. The dollar reduction in Cummins's obligation under Paragraph 83 shall be as follows: achieving initial NOx savings of 80,000 tons will provide financial relief of $4,000,000. Beyond the first 80,000 tons, the remaining $6,000,000 will be apportioned in equal amounts for each 10,000 tons of NOx savings achieved up to 220,000 tons.

85. Cummins's obligation under Paragraph 83 net of any reduction it elects to pursue through Incentive Projects under Paragraph 84 (the "Net Project Funds") shall be satisfied as follows:

(a) 20% of the Net Project Funds shall be spent on the projects agreed to in, or selected pursuant to, the California Settlement Agreement with respect to Cummins's California Pre-Settlement and Interim Engines. Cummins's satisfaction of its obligations under the California Settlement Agreement with respect to this 20% of the Net Project Funds shall fully satisfy

its obligation to the United States under this Consent Decree with respect to such amount.

(b) 25% of the Net Project Funds shall be spent on projects to be proposed by Cummins consistent with the criteria set forth in Paragraph 89, after giving due consideration to projects submitted by third parties during the public comment period under Paragraph 149 of this Consent Decree (the "Company Proposed Projects").

(c) 55% of the Net Project Funds shall be spent on the projects set forth in Appendix E to this Consent Decree (the "Appendix E Projects").

86. Within 120 days of entry of this Decree, Cummins, if it chooses to perform Incentive Projects, shall submit to the United States and CARB, for review and approval by each, a single plan for the performance or implementation of its Incentive Projects. Within 120 days of entry of this Decree, Cummins shall submit to the United States a plan for performance or implementation of its Company Proposed Projects and its Appendix E Projects (collectively, the plans required to be submitted pursuant to this Paragraph are referred to as "the Plans"). The Plans shall include a general description of each project Cummins proposes to perform or implement, including the timetable for implementation of each project and an estimate of the emission reductions that

each project will achieve. Cummins shall include in the Plans the amount of money to be spent on the Company Proposed Projects and Appendix E Projects. Each date for commencement of a project shall be the earliest practicable, given the nature of the project, after the United States' approval of the Scope of Work in accordance with Paragraph 92.

87. The Incentive Projects shall be completed no later than six years after entry of this Consent Decree. All Company Proposed Projects and Appendix E Projects shall be completed no later than eight years after entry of the Consent Decree.

88. Cummins's monitoring, administrative, or overhead costs associated with the implementation of any Company Proposed Projects or Appendix E Projects shall not be included in the amounts spent on the projects, except to the extent such costs would be deemed reasonable, allocable, and allowable under 48 C.F.R. Part 31, Subpart 31.2.

89. Any Company Proposed Projects shall be consistent with the following priorities and shall meet the following criteria:

Priorities:

(a) projects providing the greatest amount of NOx emission reductions that are readily quantifiable, verifiable, and cost effective;

(b) projects providing such emission reductions in the near-term;

(c) projects that will leverage the use of funds from other sources;

(d) projects that will reduce NOx in those areas most severely affected by ozone and acid deposition; and

(e) projects that will focus on heavy-duty engines, unless other NOx reduction opportunities are shown to be more cost-effective and efficient.

(f) projects providing the greatest amount of PM reductions that are readily quantifiable, verifiable, and cost effective;

Criteria:

(a) the project may not be for emission reduction obligations already placed on Cummins under any federal, state or local law or which have been proposed for adoption as a mandatory federal, state, or local program;

(b) the project may not duplicate programs already funded by the United States or that the United States is required by statute to perform;

(c) if it is a research and development project, the project shall demonstrate technologies having the goal of reducing HDDE NOx plus NMHC emissions below 1.5 g/bhp-hr and/or PM emissions below .05 g/bhp-hr and having the greatest likelihood of resulting in maximum long-term NOx or PM reductions. The results of such research programs shall be reported annually and shall not be considered confidential business information;

(d) the project should have broad impact or should address areas significantly affected by ozone and acid deposition; and

(e) the project must be one Cummins would not otherwise be legally required to perform outside of this Consent Decree or one previously planned by Cummins. For this purpose, a project shall be deemed to have been previously planned by Cummins if the project is reflected in a written plan approved by management on or before February 1, 1998.

90. The United States shall, within 30 days, review and either disapprove or approve the Plans. If the United States disapproves any of the Plans, in whole or in part, it shall provide Cummins with proposed modifications, and Cummins shall have 30 days to submit a revised version of the disapproved Plan(s) to the United States incorporating the United States' proposed modifications; but, if Cummins disputes the proposed

modifications, the dispute shall be governed by the dispute resolution provisions of Section XVI. With respect to the Incentive Project Plan(s), if the modifications requested by the United States conflict with modifications requested by CARB, the dispute shall be governed by the dispute resolution provisions of Section XVI. In reviewing Cummins's Company Proposed Projects Plan, the United States may consider, in addition to the priorities and criteria set forth above, whether the proposed projects, when viewed together with the proposals of the other Settling HDDE Manufacturers, will achieve maximum environmental benefit in terms of NOx and PM reductions nationwide, and are cost-effective in terms of expected NOx and PM reductions.

91. Within 90 days of the United States' approval of each of the Plans, or resolution of any dispute by the Court, Cummins shall submit a Scope of Work for each project in each approved Plan, including the manner in which it will be implemented, the timetable for implementation, the expected reductions in the emission of air pollutants, the location in which each project will be performed or in which the NOx reductions are likely to occur, and any issue that must be resolved for the project to be successful. With respect to any Incentive Project, Cummins shall submit to the United States and CARB, for review and approval by each, a single Scope of Work.

92. The United States shall review and approve or disapprove each proposed Scope of Work submitted under Paragraph 91 within 30 days of receiving it. If a Scope of Work is disapproved, the United States shall provide Cummins with an explanation as to why it is being disapproved along with proposed modifications. Cummins shall incorporate the proposed modifications within 30 days of receiving the proposed modifications; but, if Cummins disputes the proposed modifications, the dispute shall be governed by the dispute resolution provisions of Section XVI. With respect to the Scope of Work for each Incentive Project, if the modifications requested by the United States conflict with modifications requested by CARB, the dispute shall be governed by the dispute resolution provisions of Section XVI.

93. Following the United States' approval of each Scope of Work, Cummins shall commence implementation of the project covered by that Scope of Work by the date set out in the Scope of Work and shall comply with the implementation schedule set forth in the Scope of Work. Cummins shall be granted an extension of the final completion date for any project for good cause shown.

94. Each Scope of Work shall provide a certification that, as of the date the certification is submitted, Cummins is not required by any federal, state, or local law to perform or develop any of the projects it proposes to implement or perform, nor is Cummins required to perform or develop the projects by any agreement, other than this Consent Decree, by grant, or as injunctive relief in any other case. Except as set forth in Paragraph 85, Cummins shall further certify that it has not received, and is not presently negotiating to receive, and will not seek, credit for the projects in any other environmental enforcement proceeding.

95. The United States' approval of a Plan or a Scope of Work under this Section shall not be construed as a permit, modification to a permit, or determination concerning compliance with any local, state or federal law.

96. Cummins shall submit to the United States a completion report for each project no later than 30 days after the completion date. The report shall contain the following information:

(a) with respect to each approved project: (i) a detailed description of the project as implemented, including a summary for public disclosure; and (ii) certification that the project has been implemented or performed in accordance with the

requirements of this Consent Decree and the applicable Scope of Work;

(b) with respect to each approved project of the Company Proposed Projects or Appendix E Projects: (i) a detailed analysis of full costs; and (ii) a description of the environmental or public health benefits resulting from implementation of the project (including, where applicable, an estimation of the emission reduction benefits); and

(c) with respect to each approved project included in the Incentive Projects, a certification that the emission reduction amounts required under Paragraph 84 to receive the corresponding dollar reductions in its obligation under Paragraph 84 have been achieved.

97. Cummins shall submit a report as required by Paragraph 105 for any quarter in which project implementation activities have occurred, or project expenditures are made, or in which problems related to a project are encountered. Such report shall include a summary of such activities, expenditures with respect to projects, or problems and their solutions.

98. In itemizing its costs in the completion reports for Company Proposed Projects and Appendix E Projects, Cummins shall clearly identify and provide adequate documentation to substantiate all project costs.

99. Within 30 days following the date for completion of its Incentive Projects, Cummins shall certify to the United States that it has fully implemented its Incentive Projects and has achieved all the emission reductions required for the dollar reduction set forth in Paragraph 84. If Cummins cannot make the required certification, then any dollar reductions that Cummins has not qualified to receive shall become available for the implementation of Supplemental Offset Projects. Twenty percent of the available funds shall be spent on projects agreed to in, or selected pursuant to, the California Settlement Agreement, and eighty percent shall be spent on projects approved by the United States in accordance with this Section. Within 120 days following the deadline for completing the Incentive Projects, Cummins shall submit a Supplemental Offset Project Plan proposing projects consistent with the priorities and criteria set forth in this Section. The Supplemental Offset Project Plan shall be subject to the United States' review and approval or disapproval in the same manner as set forth in Paragraph 90 above, and Cummins shall submit Scopes of Work and implement any approved Scope of Work in the same manner as set forth in Paragraphs 92 and 93 above, except that all Supplemental Offset Projects shall be completed within 3 years from the date of EPA's approval of the applicable Scope of Work.

100. During the term of this Consent Decree, in any prepared public statements, oral or written, made by the Cummins about the projects under this Section, other than the campaign described in Paragraphs 101 (a) through (q), Cummins shall include the following language: “This project was undertaken pursuant to an agreement with the United States in connection with settlement of disputed claims in an enforcement action under the Clean Air Act.”

101. Except as provided herein, Cummins shall not use or rely on the emission reductions generated as part of any projects undertaken pursuant to the approved Scope of Work in any Federal or State emission averaging, banking, trading or other emission compliance program. If Cummins proposes to implement a project to research and develop new technology or new fuels, the project must include a field demonstration of the technology, if practicable. No emission reductions generated by the engines required by the project may be used or relied on for purposes of Federal or State emission averaging, banking, trading, or other emission compliance programs. However, if Cummins thereafter employs that technology in engines other than those specifically required by the project, nothing herein shall prohibit the use of the credits generated from the additional vehicles in Federal or State emission averaging, banking, trading, or other emission compliance programs.

101(a). Cummins, through Chrysler Corporation ("Chrysler"), shall commence a campaign to recall and modify the Campaign Engines in accordance with a plan approved by EPA by sending out a notice, more specifically described below, to all owners of Campaign Engines. With respect to Campaign Engines brought in to be modified from the commencement of the campaign through December 31, 1998, the modifications shall reduce emissions to the following levels, without affecting compliance with all applicable emission standards when tested on the FTP:

(i) a EURO III Composite Value Limit of 6.0 g/bhp-hr for NOx and 1.0 times the applicable FTP standard for all other regulated pollutants when tested on the EURO III Test Protocol in accordance with Appendix C of this Decree, as well as the associated Emissions Surface Limits specified in that Appendix; and,

(ii) an NTE Limit of 7.0 g/bhp-hr for NOx in accordance with Appendix C of this Consent Decree (with such allowances for calibration error at high speed for Campaign Engines modified under Subparagraph (a) as may be approved by EPA).

(b)(i) With respect to Campaign Engines brought in to be modified after December 31, 1998, the modifications shall reduce emissions to the following levels, without affecting compliance with all applicable emission standards when tested on the FTP:

(A) a EURO III Composite Value Limit of 4.0 g/bhp-hr for NOx and 1.0 time the applicable FTP standard for all other regulated pollutants when tested on the EURO III Test Protocol in accordance with Appendix C of this Decree, as well as the associated Emissions Surface Limits specified in that Appendix;

(B) an NTE Limit of 5.0 g/bhp-hr for NOx in accordance with Appendix C of this Consent Decree.

(ii) If Cummins cannot develop modifications that will reduce emissions down to the levels specified in this Paragraph with software changes only, it shall implement modifications reducing emissions from the Campaign Engines down to the closest achievable level with software changes, and with such minor hardware changes, if any, as can be developed and validated to Cummins and Chrysler design standards by the deadlines set forth in this Subparagraph (b)(ii), taking into account the potential effect on the campaign recapture rate. In no event shall the modifications reduce emissions to levels higher than those specified in Subparagraphs (a)(i) and (a)(ii). If, despite its best efforts, Cummins cannot implement the modifications required by this Subparagraph by January 1, 1999 because further time is needed to develop, validate, and implement those modifications, it may delay implementation of those modifications for the minimum amount of time needed to complete validation; however, no such delay shall extend past March 1, 1999.

(c) Cummins shall submit to EPA for review and approval a plan or plans (the “Campaign Plan”) for the conduct of a campaign with respect to the Campaign Engines to implement the modifications developed pursuant to Subparagraphs (a) and (b). The Campaign Plan shall be submitted by November 15, 1998. The Campaign Plan shall include:

(i) A description of the Campaign Engines and the vehicles in which they were installed.

(ii) A description of the specific modifications, alterations, repairs, corrections, adjustments, or other changes to bring the engines into conformity with the conditions specified in subparagraphs (a)(i) and (a)(ii), and a brief summary of the data and technical studies which support Cummins’ decision as to the particular remedial changes to be made to the Campaign Engines, including baseline and post-modification testing.

(iii) A description of the specific modifications, alterations, repairs, corrections, adjustments, or other changes to bring engines in conformity with the conditions specified in Subparagraphs (b)(i)(A) and (b)(i)(B), and a brief summary of the data and technical studies which support Cummins’ decision as to the particular remedial changes to be made to the Campaign Engines, including baseline and post-modification testing. Cummins may submit this description separately and at a later

date from the rest of the proposed Campaign Plan, but no later than November 30, 1998. If Cummins determines that the emission levels specified in subparagraphs (b)(i)(A) and (b)(i)(B) are not achievable with software and minor hardware changes or that a delay in implementing the modifications required under Subparagraph (b)(i) is needed, Cummins shall provide all data and analysis supporting this determination. In addition, Cummins shall indicate the emission levels it is able to achieve and/or the amount of delay needed to implement the required modifications, along with supporting data and analysis.

(iv) A description of the method by which Cummins, by itself or through Chrysler, will determine the names and addresses of owners of the Campaign Engines.

(v) A description of the procedure to be followed by Campaign Engine owners to have the modification performed on the Campaign Engines. This shall include designation of the date on or after which the owner can have the modification performed, the time reasonably necessary to perform the modification, and the designation of facilities at which the work can occur.

(vi) If any Campaign Engines are to be remedied by persons other than dealers or authorized warranty agents of Cummins or Chrysler, a description of the class of persons other than dealers and authorized warranty agents of the manufacturer who will remedy the engines, and a statement indicating that the

participating members of the class will be properly qualified and equipped to perform such remedial action.

(vii) One copy of the letters of notification to be sent to Campaign Engine owners.

(viii) A description of the system by which Cummins, by itself or through Chrysler, will assure that an adequate supply of parts will be available to perform the repair under the Campaign Plan, including the date by which an adequate supply of parts will be available to initiate the campaign, the percentage of total parts requirements of each person who is to perform the repair under the Campaign Plan to be shipped to initiate the campaign, and the method to be used to assure the supply remains both adequate and responsive to owner demand.

(ix) One copy of all necessary instructions to be sent to those persons who are to perform the modification under the Campaign Plan.

(x) A description of the impact of the proposed changes on fuel consumption, safety, and driveability of each class or category of Campaign Engines to be recalled and a brief summary of the data, technical studies, or engineering evaluations which support these conclusions.

(d) Notification to Campaign Engine owners shall be made by first class mail.

(e) The notification of Campaign Engine owners shall contain the following:

(i) The statement: "The U.S. Environmental Protection Agency (EPA) has determined that some 1998 Dodge Ram trucks equipped with a 5.9L Cummins 24-valve diesel engine, may be in violation of Federal Emissions Standards. . . which were established to protect the public health from the dangers of air pollution."

(ii) A statement that the vehicles will be remedied at Cummins' or Chrysler's expense and at the vehicle owner's convenience;

(iii) A clear description of the components that will be affected by the modifications and a general statement of the measures to be taken to implement the remedy;

(iv) A description of the procedure which the vehicle owner should follow to obtain the necessary service. This shall include designation of the date on or after which the owner can have the service performed, an estimate of the time reasonably necessary to perform the needed modifications and the designation of facilities at which the service can be obtained;

(v) A postage-paid card to be used by a vehicle owner in the event the vehicle has been sold, retired, or otherwise removed from service. Such card should be addressed to the manufacturer and shall provide a space in which the owner may

indicate the name and address of the person to whom the vehicle was sold.

(vi) An additional statement: “In order to ensure your full protection under the emission warranty made applicable to your vehicle under Federal law, and your right to participate in future recalls, it is recommended that you have your vehicle serviced as soon as possible. Failure to do so could legally be determined to be a lack of proper maintenance of your vehicle. Further, without this repair your vehicle may fail a state or local emissions inspection test.”

(f) No notice sent pursuant to Subparagraph (e), nor any other contemporaneous communication sent to Campaign Engine owners or dealers shall contain any statement or implication that a nonconformity does not exist or that the nonconformity will not degrade air quality.

(g) Cummins, by itself or through Chrysler, shall take appropriate steps to locate Campaign Engine owners, including obtaining motor vehicle registration lists as available from State or commercial sources as necessary to obtain the names and addresses of Campaign Engine owners to ensure an effective notification.

(h) EPA may require Cummins, by itself or through Chrysler, to send a subsequent notification to Campaign Engine owners by first class mail.

(i) The Campaign Plan shall provide that those who perform the modifications shall be required to affix a label to each Campaign Engine or vehicle modified under the campaign. The label shall be placed in such location as approved by EPA consistent with State law and shall be fabricated of a material suitable for the location in which it is installed and which is not readily removable intact. The label shall contain:

(i) The campaign number; and

(ii) A code designating the campaign facility at which the modification was performed and the date of the modification.

(j) EPA shall provide Cummins with notice of approval or disapproval of the Campaign Plan within 20 days of its submittal to the Agency. If the Campaign Plan is disapproved, EPA shall provide the reasons for disapproval, and Cummins shall have 10 days to submit a revised Campaign Plan for approval. Any disagreements between Cummins and EPA regarding the Campaign Plan shall be resolved through the dispute resolution provisions in Section XVI of this Consent Decree.

(k) The United States recognizes that Cummins, through Chrysler, has commenced its campaign prior to submittal and approval by EPA of the Campaign Plan, with respect to certain of the Campaign Engines. Prior to EPA approval of the Campaign Plan, Cummins shall attempt, to the greatest extent possible, to conduct its campaign consistent with the requirements of 40 CFR

Part 85, Subpart S and shall comply with the provisions of this Consent Decree. After submittal and approval of the Campaign Plan by EPA, Cummins shall modify implementation of the campaign to conform to the approved Campaign Plan.

(l) Cummins' implementation of any remedy agreed to, approved by, or ordered by CARB under its authority pursuant to Article 2.1, California Code of Regulations for California Campaign Engines, shall serve as full satisfaction of its campaign obligations under this Consent Decree regarding such class of California Campaign Engines.

(m) Cummins shall send to EPA a copy of all communications which relate to the campaign directed to dealers and other persons who are to perform the work under the Campaign Plan. Such copies shall be mailed to EPA contemporaneously with their transmission to dealers and other persons who are to perform the work under the Campaign Plan.

(n) Cummins, through Chrysler, shall provide for the establishment and maintenance of records to enable the parties to monitor the implementation of the campaign. The records shall include the following:

(i) The campaign number as designated by Chrysler.

(ii) The date owner notification was begun, and the date completed.

(iii) The number of Campaign Engines involved in the campaign.

(iv) The number of Campaign Engines determined to be unavailable for work under the campaign due to exportation, theft, scrapping, or other reasons specifically described and supported by Cummins.

(v) The number of engines actually receiving work under the campaign.

If Cummins determines that information provided to EPA pursuant to Subparagraphs (n)(iii) and (n)(iv) is incorrect, Cummins shall maintain revised figures together with an explanation of the discrepancy. Figures maintained pursuant to Subparagraph (n)(v) shall be cumulative totals.

(o) Cummins, through Chrysler, shall maintain in a form suitable for inspection, such as computer information storage devices or card files, lists of the names and addresses of Campaign Engine owners to whom notification was given and who received the work under the campaign. The records described in this subparagraph shall be made available to the United States upon request.

(p) The records required by Subparagraph shall be retained by Cummins in accordance with the record retention requirements of Section XVIII of this Consent Decree.

(q) Cummins shall submit the proposed Campaign Plan and reports required by this Consent Decree and the approved Campaign Plan to:

Director, Air Enforcement Division
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency (2242A)
401 M Street, S.W.
Washington, D.C. 20460

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611

by first class mail.

X. ADDITIONAL DATA ACCESS, MONITORING, AND REPORTING REQUIREMENTS

A. Access to Engine Control Module Data

102. Within 90 days after the Date of Entry of this Consent Decree, Cummins shall provide EPA with current decoder tools, passwords, and any other device or information required to obtain

access to data from Cummins's HDDEs necessary to determine reported output torque from an engine. Thereafter, Cummins shall provide EPA with any modified tool or device and any changed information promptly after any modification or change is made, so as to ensure EPA's continuing capability to access such data. At the time that Cummins provides to EPA any device or information required by this Paragraph, Cummins may designate all or a portion of the information provided to EPA, or obtainable by EPA through the use of the device or information provided directly, as Confidential Business Information in accordance with 40 C.F.R. Part 2.

103. Beginning with Model Year 2000 engines, Cummins shall configure the engine control modules installed on HDDEs manufactured by Cummins to calculate and report engine output torque (in ft-lb), engine speed (in RPM), and commanded fuel injection timing (in degrees before top dead center ("DBTDC")) at a minimum update rate of 5 Hz. Subject to the phase-in provisions of this Paragraph, Cummins shall demonstrate to the highest degree of precision and accuracy achievable consistent with good engineering practices at the time of certification that: (a) the reported output torque is equal to actual output torque; (b) the reported output RPM is equal to actual engine RPM; and (c) the commanded injection timing is equal to actual commanded injection timing in DBTDC. The obligation to make a

demonstration with respect to reported output torque imposed by this Paragraph shall be phased in as follows: Beginning with Model Year 2000, at least 25% of the total volume of HDDEs manufactured by Cummins shall be configured to provide reported output torque to the degree of precision and accuracy established pursuant to this Paragraph; and beginning in Model Year 2001, all HDDEs manufactured by Cummins shall be so configured. All of the required data outputs specified above shall be made compatible with industry standard data links.

B. Compliance Representative

104. Within 15 days of entry of this Consent Decree, Cummins shall designate a duly authorized representative whose responsibility shall be to oversee Cummins's program for implementation of the measures specified in Section VI (Requirements for On-road HDDEs), Section VIII.B (In-use Testing Requirements), Section IX (Additional Injunctive Relief), and to file such reports and certifications as are required under this Consent Decree. This person may not be the same individual as Cummins's Compliance Auditor. The designated representative shall also attend the progress meetings among the Parties as provided for in Paragraph 106, and shall be responsible for providing all additional information and documentation requested

by the United States in accordance with Paragraph 105 of this Consent Decree.

C. Progress Reporting

105. In addition to any other requirement of this Consent Decree, Cummins shall submit to EPA written quarterly progress reports that: (a) describe the actions which have been taken toward achieving compliance with this Consent Decree during the previous quarter; (b) include a summary of all research and development activity, investigatory activity and procurement activity engaged in during the quarter which relates to the development, procurement, or implementation of technology to assist in meeting any of the compliance obligations of this Decree; (c) include the information required by Paragraphs 44, 55, 59 and 97; (d) describe all actions, including, but not limited to, actions related to compliance with the EURO III, NTE, TNTE, Smoke (or alternate Opacity), and NOx plus NMHC limits of this Decree, and actions related to implementation of the Section IX.C requirements, and the In-Use Testing Program; (e) include the current running total of Low NOx Rebuild Kits provided to engine rebuilders; and (f) include a summary of all tests conducted in order to comply with the requirements of this Consent Decree, with documentation for such tests being made available by Cummins to the United States upon request. Cummins

may designate all or a portion of a report as Confidential Business Information in accordance with 40 C.F.R. Part 2.

106. Cummins shall submit an initial progress report to EPA within 45 days of the close of the quarter during which this Consent Decree is entered and within 30 days of the close of each quarter thereafter, through and including the quarter in which this Consent Decree is terminated pursuant to Section XXVI of this Consent Decree, containing the information required by Paragraph 105. If requested by the United States, Cummins shall provide briefings for the United States to discuss the progress of implementation of this Consent Decree.

107. Each notice, submission, or report required by this Consent Decree, except for any report required to be submitted by the Compliance Auditor, shall contain the following statement signed by a responsible corporate official: “To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fines and imprisonment for knowing violations.” Each notice, submission or report shall be accompanied by a transmittal letter referencing the appropriate Paragraph of this Consent Decree. Cummins shall not object to the admissibility in evidence of any such notice, submission, or

reports, except on the grounds of relevancy, in any proceeding to enforce this Consent Decree.

108. Compliance with the reporting requirements of this Consent Decree shall not relieve Cummins of its obligation to comply with any other reporting requirements imposed by any applicable federal, state, or local laws, regulation, or permit.

XI. NON-CIRCUMVENTION PROVISIONS

109. Cummins shall not, directly or indirectly through its dealers, distributors, or other third parties (including any present or future manufacturer of HDDEs or Nonroad CI Engines), circumvent the requirements of this Consent Decree through leasing, licensing, sales, or other arrangements, or through stockpiling (i.e., build up of an inventory of engines outside normal business practices before a new limit under this Consent Decree takes effect).

110. All HDDEs and Nonroad CI Engines manufactured at any facility owned or operated by Cummins on or after January 1, 1998, for which a Certificate of Conformity is sought, must meet all applicable requirements of this Decree, regardless of whether Cummins still owned, owns, operated, or operates that facility at the time the engine is manufactured.

XII. NOTICE AND SUBMITTALS

111. Whenever, under the terms of this Consent Decree, a notice, submission, report, or other document is required to be sent by one Party to another, it shall be directed to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to the other Party in writing. All notices and submissions shall be considered effective upon receipt, unless otherwise provided. Such notice shall be sent to the Parties as follows:

As to the United States:

Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station
Washington, D.C. 20044

and

Director, Air Enforcement Division (2242A)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

As to Cummins:

Cummins Engine Company, Inc.

500 Jackson Street

Columbus, IN 47203

Attention: General Counsel

112. Any Party may change the address for providing notices to it by serving all other addressees identified above with a notice setting forth such new address.

XIII. CIVIL PENALTY

113. Cummins has agreed to pay an aggregate civil penalty of twenty-five million dollars ($25,000,000) under this Consent Decree and the California Settlement Agreement to resolve the federal and state claims described in those agreements. Accordingly, under this Consent Decree, within 15 days of the Date of Entry, Cummins shall pay to the United States a total of eighteen million seven hundred fifty thousand dollars ($18,750,000) in one payment, or at Cummins' option, in three equal installments of six million two hundred fifty thousand dollars ($6,250,000) plus interest on the unpaid balance remaining after the first payment at the per annum rate as specified in 31 U.S.C. Section 3717. If, however, Cummins' Board of Directors approves, after the Date of Filing: a repurchase of stock (except for certain isolated repurchases of small blocks of stock from Cummins's employees in the normal course of business and consistent with historical practice); an increase in

dividends; or the making of loans (except in the normal course of business and consistent with historical practice); then the interest rate applicable to the balance due shall be adjusted to a rate equal to 1 percent above the otherwise applicable rate under 31 U.S.C. Section 3717. In the event Cummins chooses to pay in installments, the first installment shall be due and payable within 25 days of the Date of Entry with each of the remaining two installments due and payable on the next two successive anniversaries of the Date of Entry along with the accrued interest on the unpaid balance. Late payment of the civil penalty, or any installment thereof (along with any accrued and unpaid interest on any such installment), shall be subject to additional interest and fees as specified in 31 U.S.C. § 3717.

114. Payment shall be made by Electronic Funds Transfer by 4:00 p.m. Eastern Standard Time on the due date to the Department of Justice lockbox bank in accordance with specific instructions to be provided to Cummins upon entry of this Consent Decree and shall reference Department of Justice Case Nos. 90-5-2-1-2136 and 90-5-2-1-2136A and the civil action number of this matter. Cummins shall transmit notice of such payments to the United States.

115. Penalty payments made pursuant to Paragraph 113 of this Consent Decree are civil penalties within the meaning of Section

162(f) of the Internal Revenue Code, 26 U.S.C. § 162(f) and are not tax deductible for the purposes of Federal Law.

XIV. STIPULATED PENALTIES AND OTHER PAYMENTS

116. Cummins shall pay stipulated penalties and other payments to the United States as follows:

(a) If Cummins seeks certificates of conformity for any affected HDDEs, but cannot certify compliance with any applicable EURO III, NTE, TNTE, Smoke (or alternate Opacity), or NOx plus NMHC Limits, or the Nonroad CI Engine standard pull-ahead requirements, Cummins shall make payments to the United States as follows:

(i) For failure to certify to the applicable EURO III Limits for CO or HC, per engine non-conformance penalties ("NCPs") shall be $200;

(ii) For failure to certify to the applicable Smoke or alternate Opacity Limits, per engine NCPs shall be $200;

(iii)For failure to certify to the applicable EURO III, NTE, or TNTE Limits for NOx, NOx plus NMHC, or PM, the NOx plus NMHC Limits, or the Nonroad CI Engine standard pull-ahead requirements, NCPs shall be calculated using the NCP procedures, equations, and values specified in 40 CFR Part 86, Subpart L as if they were failures of the regulatory FTP limit for HDDEs, with the following exceptions:

(A) For HDDEs manufactured prior to October 1, 2002, the applicable EURO III and NTE “upper limit” (the UL value in the equations found at 40 CFR 86.1113-87) for NOx shall be 1.0 g/bhp-hr plus the applicable EURO III or NTE Limit. For HDDEs manufactured on or after October 1, 2002, the applicable EURO III, NTE, and TNTE upper limit for NOx plus NMHC shall be the upper limit for NOx plus NMHC for Model Year 2004 engines set out in the regulations minus 2.5 g/bhp-hr plus the EURO III, NTE or TNTE Limit--i.e.,

$$(UL_{NOx + NMHC} - 2.5 \text{ g/bhp-hr}) + S;$$

however, if no upper limit is set by regulation for NOx plus NMHC for Model Year 2004 engines, then the applicable EURO III, NTE, and TNTE upper limit for NOx plus NMHC shall be 1.5 g/bhp-hr plus the EURO III, NTE or TNTE Limit. For HDDEs, except Urban Bus Engines, the applicable EURO III, NTE, and TNTE upper limit for PM shall be 0.15 g/bhp-hr plus the applicable EURO III, NTE, or TNTE Limit. For Urban Bus Engines, the applicable EURO III, NTE, and TNTE upper limit for PM shall be 0.02 g/bhp-hr plus the applicable EURO III, NTE, or TNTE Limit. For Nonroad CI Engines at or above 750 horsepower, the applicable upper limit for NOx plus NMHC shall be 6.9 g/bhp-hr;

(B) For HDDEs manufactured prior to October 1, 2002, the COC_{50}, COC_{90}, MC_{50}, and F values and the factor used to calculate the engineering and development component of the NCP

for NOx shall be those found at 40 CFR 86.1105-87(h). For HDDEs, except Urban Bus engines, the COC_{50}, COC_{90}, MC_{50}, and F values and the factor used to calculate the engineering and development component of the NCP for PM shall be those found at 40 CFR 86.1105-87(f)(2). For Urban Bus engines, the COC_{50}, COC_{90}, MC_{50}, and F values and the factor used to calculate the engineering and development component of the NCP for PM shall be those found at 40 CFR 86.1105-87(g)(3).

(C) The "S" value used in the equations found at 40 CFR 86.1113-87 shall be the applicable emission limit that is exceeded under this Decree;

(D) For purposes of calculating the annual adjustment factor (the "AAF" values used in the equations found at 40 CFR 86.1113-87), the first model for which an NCP shall be considered available shall be the first Model Year that an emission limit is applicable or becomes more stringent;

(E) For HDDEs manufactured on or after October 1, 2002, subject to the exceptions specified in Paragraph 116(a), NCPs for failure to certify to the EURO III, NTE, TNTE, or NOx plus NMHC emission limits shall be calculated in accordance with the NCP procedures, equations and values found in 40 CFR Part 86, Subpart L applicable to Model Year 2004 HDDEs. If no COC_{50}, COC_{90}, MC_{50}, and F values or factors used to calculate the engineering and development component of the NCP for Model Year

2004 HDDEs are established by regulation, then the values and factors shall be those applicable to the 1998 Model Year multiplied by 1.5. Payment of NCPs pursuant to Subparagraph 116(a)(iii)(E) will satisfy any NCPs that are otherwise owed to the United States as a result of a failure to certify to the regulatory FTP limit for NOx plus NMHC;

(F) For failure to certify to the Nonroad CI Engine standard pull-ahead requirements, subject to the exceptions specified in Paragraph 116(a), NCPs shall be calculated in accordance with the NCP procedures, equations and values found in 40 CFR Part 86, Subpart L applicable to Model Year 2004 HHDDEs. If no COC_{50}, COC_{90}, MC_{50}, and F values or factors used to calculate the engineering and development component of the NCP for Model Year 2004 HHDDEs are established by regulation, then the values and factors shall be those applicable to 1998 Model Year HHDDEs multiplied by 1.3.

(G) If the “compliance level” for an engine family exceeds the applicable upper limit, then NCPs will be determined by calculating the applicable NCP as if the compliance level were equal to the upper limit and then multiplying the resulting NCP amount by the following:

$$1 + \frac{[.25 \times (CL - UL)]}{[(UL - EL)]}$$

where:

CL = The actual compliance level
UL = The upper limit

EL = The applicable emission limit under this Decree;

(H) A separate NCP shall be paid for each pollutant where there is a failure to certify to any emission limit imposed by this Consent Decree. For example, if a particular engine configuration exceeds the applicable NTE Limit for both NOx and PM, then Cummins shall be liable for separate NCPs based on the amounts determined under this Subparagraph for both the NOx and PM exceedances of the NTE Limit. However, if an engine configuration exceeds more than one emission limit under this Decree for the same pollutant (e.g., an engine configuration fails to meet the applicable NOx limit for both the EURO III Composite Value Limit and the NTE Limit), Cummins shall be liable for only one NCP. To determine the per engine NCP where an engine configuration exceeds multiple emission limits for the same pollutant, Cummins shall calculate the applicable per engine NCP in accordance with this Subparagraph for each limit exceeded, and the per engine NCP shall be the one resulting in the largest payment;

(I) Any dispute arising under or relating to this Consent Decree regarding whether a compliance level has been appropriately calculated shall be subject to the administrative hearing procedures found at 40 CFR 86.1115-87. However, any appeal of a final decision by the Environmental Appeals Board shall not be subject to the provisions of Section 307 of the Act,

42 U.S.C. § 7607, but instead shall be resolved through the dispute resolution procedures in Section XVI of this Consent Decree. For any hearing under Subparagraph 116(a)(iii)(I), EPA shall appoint a hearing officer who shall preside at any hearing at which, under existing regulations, an administrative law judge would otherwise preside; and,

(J) Payment of NCPs under this Subparagraph shall be made in accordance with the procedures found at 40 CFR 86.1113-87(g), except that the quarterly payments shall be payable to the "Treasurer, United States of America," and sent to the Office of the United States Attorney for the District of Columbia, referencing the civil action number of this matter. A copy of the transmittal letter and check and the information required to be submitted quarterly to EPA pursuant to 40 CFR 86.1113-87(g)(3) shall be sent to the United States.

(b) In-use Compliance. This Subparagraph (b) applies only to HDDEs installed in vehicles and introduced into commerce. The stipulated penalties set forth in Subparagraph (b) apply only to engines manufactured on or after January 1, 2000, and only to NOx or NOx plus NMHC violations of the EURO III, NTE, TNTE, and NOx plus NMHC limits and requirements set forth in this Consent Decree. Stipulated penalties may be assessed only once under Subparagraph (b)(i) and once under (b)(ii) for an affected population of engines, unless the subsequent emissions exceedance

is the result of a separate, previously unidentified cause. In evaluating the scope of the affected population for purposes of this Section, there shall be a rebuttable presumption that the affected population is the engine family to which the tested engines belong. No engine may be used to establish the existence of an emissions exceedance if the engine or vehicle in which it was installed was subject to abuse or improper maintenance or operation, or if the engine was improperly installed, and such acts or omissions caused the exceedance.

(i) The stipulated penalties set forth in this Subparagraph apply when a population of engines, in-use, exceeds an applicable emission limit by 0.5 g/bhp-hr or more. For purposes of this Subparagraph, the "emissions threshold" shall mean (A) for a test using vehicle test equipment (e.g., an over-the-road mobile monitoring device such as "ROVER", or a chassis dynamometer), the applicable maximum NOx emission limit plus the greater of 0.5 g/bhp-hr or one standard deviation of the data set established pursuant to Subparagraph (b)(i)(A) below; or (B) for a test using an engine dynamometer, the applicable maximum NOx emission limit plus 0.5 g/bhp-hr.

(A) Where an engine dynamometer or vehicle test shows an apparent exceedance of the emissions threshold, the party conducting the original test shall repeat such test under the same conditions at least nine times. If the mean of the tests does not exceed the emissions threshold, Cummins shall not be

obligated to take further action under Subparagraphs (b)(i)(B),(C), or (E) based on the results of the tests. If the mean of the tests exceeds the emissions threshold, then the party conducting the tests shall notify the other party to this Decree within 30 days of completing testing, and Cummins shall perform the engineering analysis and/or conduct further testing in accordance with Subparagraphs (b)(i)(B) and (C).

(B) If the testing conducted under Subparagraph (b)(i)(A) was performed using vehicle test equipment, then Cummins may elect to conduct additional tests of that engine using an engine dynamometer, provided that all environmental and engine operating conditions present during vehicle testing under Subparagraph (b)(i)(A) can be reproduced or corrected consistent with Subparagraph (b)(i)(D). If Cummins elects to conduct such additional engine dynamometer tests, it shall provide EPA with at least three business days notice prior to commencement of such testing. If based on such additional tests Cummins demonstrates that the engine does not exceed the emissions threshold, Cummins shall not be obligated to take further action under Subparagraphs(b)(i)(A),(B),(C), or (E). Otherwise, Cummins shall conduct further testing in accordance with Subparagraph (b)(i)(C) and/or perform an engineering analysis to determine the percentage of the affected population that exceeds the emissions threshold and the emission levels of the exceeding engines.

However, Cummins may not determine the percentage of the affected population or the emission levels solely on the basis of an engineering analysis unless it demonstrates that such analysis alone is sufficient under the circumstances.

(C) Such testing shall be conducted as follows unless Cummins otherwise resolves the issue with EPA or EPA approves an alternate procedure. Within 60 days of receiving notice of an exceedance under Subparagraph (b)(i)(A) if EPA was the party that conducted the testing, or within 60 days of completing testing under Subparagraph (b)(i)(A) that demonstrated an exceedance if Cummins conducted the testing, Cummins shall commence testing of not less than ten additional in-service engines. Cummins may conduct these tests using vehicle testing equipment, or using an engine dynamometer, at Cummins's option. If on two prior occasions in any one calendar year, Cummins was notified by EPA pursuant to Subparagraph (b)(i)(A) (or CARB pursuant to Paragraph 116 (b)(i)(A) of the California Settlement Agreement) of apparent exceedances and established that there were no exceedances of the emission threshold in the affected populations as a result of testing conducted under Subparagraph (b)(i)(C), then for the remainder of the calendar year Cummins shall not be obligated to perform further testing under this Subparagraph, but nothing herein shall be construed to limit EPA's authority to conduct such testing.

(D) The testing of additional engines under Subparagraphs (b)(i)(B) and (C), above, shall be conducted under conditions that are no less stringent than the initial test in terms of those parameters that may affect the result, and, at Cummins's option, may be limited to those emission limits and conditions for which apparent exceedances have been identified. Such parameters typically, but not necessarily, include relevant ambient conditions, operating conditions, service history, and age of the vehicle. Prior to conducting any testing, Cummins shall submit a test plan to EPA for its review and approval. EPA shall approve the test plan or propose modifications to the test plan within 10 days of receipt. Within 30 days following EPA's proposed modifications, Cummins shall incorporate the proposed modifications; but if Cummins disputes the proposed modifications, the dispute shall be resolved in accordance with the dispute resolution provisions of Section XVI of this Consent Decree. Cummins shall implement the test plan as approved. Special conditioning of test engines shall not be permitted. Where Cummins elects to conduct the additional testing utilizing an engine dynamometer, it shall reproduce relevant engine operating and environmental conditions associated with the initial exceedance; provided, however, that correction factors may be used to reproduce temperature, humidity or altitude conditions that cannot be simulated in the laboratory.

Regardless of the testing equipment utilized, the test results shall be adjusted to reflect documented test systems error and/or variability in accordance with good engineering practices.

(E) Cummins shall pay stipulated penalties under Subparagraph (b)(i) for each engine in the affected population estimated, based on an engineering analysis or testing conducted under Subparagraph (C) and using standard statistical procedures and good engineering judgment, to have an emission level equal to or in excess of the emission threshold, as follows:

HHDDE Engines	**[3] Emission Threshold, but < Emission Threshold Limit + 1.5 g/bhp-hr**	**[3] Emission Threshold Limit + 1.5 g/bhp-hr**
1 – 4,000	$250 per engine	$500 per engine
4,001-12,000	$250 per engine	$250 per engine
> 12,000	$100 per engine	$100 per engine

LHDDE/MHDDE Engines	**[3] Emission Threshold, but < Emission Threshold Limit + 1.5 g/bhp-hr**	**[3] Emission Threshold Limit + 1.5 g/bhp-hr**
1 – 4,000	$125 per engine	$250 per engine
4,001-12,000	$125 per engine	$125 per engine
> 12,000	$ 50 per engine	$ 50 per engine

(ii) The stipulated penalties set forth in this Subparagraph apply when the mean emissions of a population of engines, in-use, exceeds an applicable NOx or NOx plus NMHC emission limit by less than 0.5 g/bhp-hr. In such circumstances, the United States shall have the burden of proving, by a preponderance of the evidence in a de novo proceeding in this Court, that the mean emissions of the affected population exceeds the applicable emission limit. In determining the mean emission

level of an affected population for purposes of Subparagraph (b)(ii), any engines for which a penalty is due or has been paid under Subparagraph (b)(i)(E) shall not be included in the calculation. If the Court determines that the mean emissions of the affected population exceeds the applicable emission limit, then Cummins shall pay a stipulated penalty for each engine in the affected population as follows:

HHDDE Engines	**$ per .1 g/bhp-hr exceedance**
1 – 4,000	$50 per engine
4,001-12,000	$40 per engine
> 12,000	$20 per engine

LHDDE/MHDDE Engines	**$ per .1 g/bhp-hr exceedance**
1 – 4,000	$25 per engine
4,001-12,000	$20 per engine
> 12,000	$10 per engine

(iii) In any case where an emissions exceedance under Subparagraphs (b)(i) or (b)(ii) above is identified and Cummins agrees with EPA to recall or otherwise take steps to modify the affected engines to correct the emissions exceedance, the stipulated penalties otherwise due under this Subparagraph shall be adjusted and shall be payable as follows: the affected population for purposes of calculating the penalty amount due shall be reduced by the number of engines modified within one year of when the stipulated penalty would otherwise be due; and the penalty, plus interest at the rate specified in 31 U.S.C.

3717, shall be due and payable one year plus 30 days after the date when it would otherwise be due under this Section.

(c) AECD Reporting: for failure to comply with AECD reporting requirements of Paragraph 11, a stipulated penalty of $25,000 per certification application;

(d) Defeat Device: for violations of Paragraphs 13 and 18, a stipulated penalty of $500 per engine, provided however that if the device involved was disclosed by Cummins as an AECD in accordance with Paragraph 11, no stipulated penalty will be assessed;

(e) Submissions and Testing: stipulated penalties for each separate failure: to submit a Low NOx Rebuild Program Plan within the time set forth in Paragraph 65; to complete any test required by the in-use testing requirements of Section VIII.B; to submit a quarterly report within the time required by Paragraph 106 of this Decree; or to comply with any requirement of Section XIX:

Days of Non-compliance or violation	Penalty per violation per day
1st to 30th day	$100
31st to 60th day	$250
After 60 days	$500

(f) Low NOx Rebuild: stipulated penalties for failure to comply with the schedules in the approved Low NOx Rebuild Plan within the time frames required by Paragraph 68:

Days of Non-compliance or violation	Penalty per Violation per day

1st to 30th day	$500
After 30 days	$2,000

(g) Compliance Auditor: for failure to identify a Compliance Auditor as required by Paragraph 31 of this Decree, a stipulated penalty of $1,000 per day;

(h) Plan and Scope of Work: stipulated penalties for failure to submit a Plan or a Scope of Work within the times set forth in Paragraphs 42, 49, 54, 58, 59, 86, 90, 91, 92 and 99 as follows for each day of delay:

Days of Non-compliance or violation	Penalty per Violation per day
1st to 30th day	$250
31st to 60th day	$500
After 60 days	$750

(j) stipulated penalties for failure to complete any project of an approved Offset Scope of Work within the times required by Paragraph 93 and the Scope of Work, or agreed to by the Parties, for each day of delay for each project:

Days of Non-compliance or violation	Penalty per Violation per day
1st to 30th day	$250
31st to 60th day	$750
After 60 days	$1,500

(k) For failure to comply with the requirements of Paragraph 141, a stipulated penalty of $5,000 per day per violation.

117. Upon entry of this Consent Decree, the stipulated penalty and other payment provisions of this Consent Decree shall be retroactively enforceable with regard to any and all violations of, or noncompliance with, the Consent Decree that have occurred after the date of filing but prior to the date of entry of the Consent Decree.

118. Stipulated penalties provided for in this Consent Decree shall automatically begin to accrue on the day performance is due or the non-compliance occurs, and shall continue to accrue through the day performance is completed or the non-compliance ceases. Nothing herein shall be construed to prevent the simultaneous accrual of separate stipulated penalties for separate violations of this Consent Decree. The amounts specified in Subparagraph 116(a), (b), (d), (e), (f), and (g), shall be the maximum NCPs or stipulated penalties under those Subparagraphs for which Cummins shall be liable, whether paid to the United States, CARB, or both. Payment of stipulated penalties as set forth above is in addition to, and the United States specifically reserves all other rights or remedies which may be available to the United States by reason of Cummins's failure to comply with the requirements of this Consent Decree, or any federal, state or local law or regulation applicable to Cummins's HDDEs. Payment of NCPs pursuant to Paragraph 116(a) shall constitute compliance

with the provisions of this Consent Decree applicable to the limits for which the NCPs were paid.

119. Stipulated penalties from the date of accrual are due and payable upon demand by the United States on or before the thirtieth day following the demand and shall be due and payable monthly thereafter. Late payment of stipulated penalties shall be subject to interest and fees as specified in 31 U.S.C. § 3717. All stipulated penalties shall be paid by cashiers or certified check or electronic funds transfer, payable to the "Treasurer, United States of America," and sent to the Office of the United States Attorney for the District of Columbia, referencing the civil action number of this matter. A copy of the transmittal letter and check shall be sent to the United States.

120. Stipulated penalties shall continue to accrue during any dispute resolution process. Should Cummins dispute its obligation to pay part or all of a stipulated penalty, it shall place the disputed amount demanded by the United States in a commercial escrow account pending resolution of the matter and request that the matter be resolved through the dispute resolution procedures in Section XVI of this Consent Decree. In the event the Court resolves the dispute in Cummins's favor, the escrowed amount plus accrued interest shall be returned to Cummins.

121. If the United States prevails in an action to enforce this Consent Decree, Cummins shall reimburse the United States for all its costs in such action, including attorney time. Claims for such costs, including attorney time, shall proceed in accordance with to Fed. R. Civ. P. 54(d).

122. Notwithstanding any other provision of this Section, the United States may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Consent Decree.

XV. FORCE MAJEURE

123. “Force Majeure,” for purposes of this Consent Decree, shall mean any event arising wholly from causes beyond the control of Cummins or any entity controlled by the Cummins (including, without limitation, Cummins’s contractors and subcontractors, and any entity in active participation or concert with Cummins with respect to the obligations to be undertaken by Cummins pursuant to this Decree), which prevents timely compliance with the requirements of this Consent Decree. The requirements of the Consent Decree include an obligation reasonably to anticipate any potential Force Majeure event and best efforts to address the effects of any potential Force Majeure event (1) as it is occurring and (2) following the potential Force Majeure event, such that the delay is minimized to the greatest extent possible.

124. “Force Majeure” does not include technological infeasibility, financial inability, or unanticipated or increased costs or expenses associated with the performance of Cummins’s obligations under this Consent Decree.

125. If any event occurs or has occurred that may delay compliance with any requirement of this Consent Decree, whether or not caused by a Force Majeure event, Cummins shall notify, either in writing or orally, the United States within 5 days of when Cummins first knew that the event might cause a delay. Within 10 days thereafter, Cummins shall provide in writing to the United States an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of the measures to be taken to prevent or mitigate the delay or the effect of the delay; and Cummins’s rationale for attributing such delay to a Force Majeure event if Cummins intends to assert such a claim.

126. Cummins shall include with any notice, the documentation supporting its claim that the delay was attributable to a Force Majeure event. Failure to comply with the requirements of Paragraphs 123 and 125 shall preclude Cummins from asserting any claim of Force Majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. Cummins shall be deemed to know of

any circumstance of which Cummins or any entity controlled by Cummins knew or, through the exercise of due diligence, should have known.

127. If the United States does not dispute that the delay or anticipated delay is attributable to a Force Majeure event, the time for performance of the obligations under this Consent Decree affected by the Force Majeure event will be extended for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the Force Majeure event shall not, of itself, extend the time for performance of any other obligation under the Decree.

128. If the United States does not agree that the delay or anticipated delay has been or will be caused by a Force Majeure event, it will notify Cummins in writing of its decision. Within 15 days of receiving written notice from the United States of such disagreement, Cummins may submit the matter to the Court for resolution. If Cummins submits the matter to the Court for resolution, Cummins shall have the burden of proving by a preponderance of the evidence that the event is a Force Majeure as defined herein, that Cummins used best efforts to avoid a Force Majeure or minimize the delay; the duration of any delay attributable to the Force Majeure; and that it met the requirements of Paragraph 125. If, upon submission to the Court, the Court determines that the delay was caused by a Force Majeure

event, as defined herein, the delay shall be excused, but only for the period of the actual delay resulting from the Force Majeure event. If, upon submission to the Court, the Court determines that the delay was not caused by a Force Majeure event, as defined herein, Cummins shall pay the stipulated penalties attributable to such delay, plus accrued interest, in accordance with Paragraph 118. Any such payments shall be made within 15 days from the court's decision.

XVI. DISPUTE RESOLUTION

129. The dispute resolution procedures of this Section shall be the exclusive mechanism to resolve all disputes arising under or with respect to this Consent Decree unless otherwise expressly provided for in this Consent Decree. However, the procedures set forth in this Section shall not apply to actions by the United States to enforce obligations of Cummins that have not been disputed in accordance with this Section. In reviewing any dispute under this Section, the Parties agree that the Court, or any hearing officer appointed under this Consent Decree, should consider the effect of the resolution on other Settling HDDE Manufacturers. The United States and Cummins consent to intervention by CARB for purposes of resolution of disputes arising under Paragraphs 42, 49, 51, 54, 58, 59, 66, 78, 90 and/or 92 of this Consent Decree, or as otherwise necessary for the proper administration of this Consent Decree.

130. Any dispute regarding the meaning of this Consent Decree shall be reviewed in accordance with applicable principles of law.

131. Existing administrative hearing and other procedures applicable to currently enforceable emission limits shall apply to any dispute which arises with respect to emission limits set forth in this Consent Decree regarding EURO III, NTE, TNTE, Smoke (or the alternate Opacity), the NOx plus NMHC Limit, NCPs under Paragraph 116(a), or pursuant to Paragraph 60 of this Consent Decree (regarding the requirements specified in Section IX.A of this Decree), subject, however, to the following:

(a) EPA shall appoint a hearing officer who shall preside at any hearing at which, under existing regulations, an administrative law judge would otherwise preside; and

(b) Review by the Court shall be as if it were review of final agency action under 5 U.S.C. § 706.

132. Any dispute that arises under or with respect to this Consent Decree, other than the disputes subject to Paragraph 131 of this Decree, shall in the first instance be the subject of informal negotiations between the Parties. The period of informal negotiations shall not exceed 20 days from the time the dispute arises, unless the Parties agree to extend the time period for informal negotiations. The dispute shall be considered to have arisen when one Party sends the other Party a

written Notice of Dispute. Judicial review of any dispute governed by this Paragraph shall be governed by applicable principles of law.

133. In the event the Parties cannot resolve a dispute by informal negotiations under the preceding Paragraph, then the position advanced by the United States shall be considered binding, unless, within 30 days after the conclusion of the informal negotiation period, Cummins invokes the formal dispute resolution procedures of this Section by serving on the United States a written Statement of Position on the matter in dispute. This Statement of Position shall include, but not be limited to, any factual data, analysis or opinion supporting that position and any supporting documentation relied upon by Cummins.

134. Within 30 days after receipt of Cummins's Statement of Position, the United States shall serve on Cummins its Statement of Position, including, but not limited to, any factual data, analysis, or opinion supporting that position and all supporting documentation relied upon by the United States.

135. Following receipt of the United States' Statement of Position, Cummins shall have 10 days to file with the Court and serve on the United States a motion for judicial review of the dispute; otherwise the United States' Statement of Position shall be binding on Cummins. Cummins's motion for review shall set forth the matter in dispute, the efforts made by the Parties to

resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly and timely implementation of the Consent Decree. The United States may file a response to Cummins's motion within 10 days of service of that motion.

136. The invocation of formal dispute resolution procedures under this Section shall not extend, postpone or affect in any way any obligation of Cummins under this Consent Decree, unless the United States or the Court agrees otherwise. Stipulated penalties with respect to the disputed matter shall continue to accrue but payment shall be stayed pending resolution of the dispute as provided in Paragraph 120 of this Decree. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Consent Decree. In the event Cummins does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XIV of this Decree.

XVII. EFFECT OF SETTLEMENT

137. Satisfaction of all the requirements of this Consent Decree, and payment of $6,250,000 to CARB under the California Settlement Agreement, constitutes full settlement of and shall resolve all civil liability of Cummins to the United States for the civil violations alleged in the Complaint, including for the designation of the rated speed of engines described in the Complaint, and for any civil violations that could hereafter be alleged under the Clean Air Act or regulations promulgated thereunder based on: (i) the use of the injection-timing strategies described in the Complaint on Pre-Settlement Engines; and (ii) the use of electronic engine control strategies on HDDEs in accordance with Appendix B-1, B-2, B-3 and B-4, and this Consent Decree.

138. With respect to LMB Engines manufactured before July 31, 1999, EPA shall not base a determination under Section 207(c)(1) of the Act, 42 U.S.C. § 7541, that any class or category of the Pre-Settlement or Interim Engine does not conform to the regulations prescribed under Section 202 of the Act, 42 U.S.C. § 7521, or a determination under Section 206(b) of the Act, 42 U.S.C. § 7525(b), to suspend or revoke a Certificate of Conformity, on the basis that the engine contains one or more of the injection-timing strategies specifically described in Appendix B-1 or B-2, as limited by B-4 in Model Year 2000, if all

other requirements applicable to that engine found in this Decree and the regulations are met.

139. With respect to LMB Engines manufactured before October 1, 2002, EPA shall not base a determination under Section 207(c)(1) of the Act, 42 U.S.C. § 7541, that any class or category of the Pre-Settlement or Interim Engine does not conform to the regulations prescribed under Section 202 of the Act, 42 U.S.C. § 7521, or a determination under Section 206(b) of the Act, 42 U.S.C. § 7525(b), to suspend or revoke a Certificate of Conformity, on the basis that the engine contains one or more of the injection-timing strategies specifically described in Appendix B-2 or B-3 (after July 31, 1999), as limited by B-4 in Model Year 2000, if all other requirements applicable to that engine found in this Decree and the regulations are met.

140. With respect to Truck HHDDEs manufactured before October 1, 2002, EPA shall not base a determination under Section 207(c)(1) of the Act, 42 U.S.C. § 7541, that any class or category of the Pre-Settlement or Interim Engine does not conform to the regulations prescribed under Section 202 of the Act, 42 U.S.C. § 7521, or a determination under Section 206(b) of the Act, 42 U.S.C. § 7525(b), to suspend or revoke a Certificate of Conformity, on the basis that the engine contains one or more of the injection-timing strategies specifically described in Appendix B-1, B-2 or B-3, as limited by B-4 in Model Year 2000,

if all other requirements applicable to that engine found in this Decree and the regulations are met.

XVIII. RIGHT OF ENTRY

141. Until termination of this Consent Decree Cummins shall allow the United States, and its authorized representatives, contractors, consultants, and attorneys access, at reasonable times and with reasonable advance notice, to any facilities owned or controlled by Cummins relating to the manufacture of diesel engines and to any facilities owned or controlled by Cummins where activities related to compliance with this Decree are being performed, for the purpose of: monitoring the progress of activities required by this Consent Decree; verifying any data or information submitted by Cummins to the United States; inspecting records; or conducting testing. This provision is in addition to, and in no way limits or otherwise affects, any right of entry, inspection or information collection held by the United States pursuant to the Act or other applicable federal law or regulations promulgated thereunder.

XIX. ACCESS TO INFORMATION AND RETENTION OF DOCUMENTS

142. Cummins shall preserve, for five (5) years after termination of the applicable Section of this Consent Decree, an original or a copy of all data and final documents and records (including all electronic documents and records, but excluding drafts, where a final version exists, and notes) and information within its possession or control or that of its contractors or agents relating to implementation of and compliance with this Consent Decree, including, but not limited to, testing, analysis, production records, receipts, reports, research, correspondence, or other documents or information related to compliance with the Consent Decree.

143. Cummins shall provide to the United States, upon request, originals or copies of all documents and information within its possession or control or that of its contractors or agents relating to implementation of and compliance with this Consent Decree, including, but not limited to, testing, analysis, production records, receipts, reports, research, correspondence, or other documents or information related to compliance with the Consent Decree.

144. All information and documents submitted by Cummins to the United States pursuant to this Consent Decree shall be subject to public inspection, unless identified and supported as

confidential business information by Cummins in accordance with 40 C.F.R. Part 2.

145. Cummins may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Cummins asserts such a privilege in lieu of providing documents, Cummins shall provide the United States with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the contents of the document, record, or information; and (6) the privilege asserted by Cummins. However, no document, report or other information required to be created or generated by this Consent Decree shall be withheld on the grounds that it is privileged. If a claim of privilege applies only to a portion of a document, the document shall be provided to the United States in redacted form to mask the privileged information only. Cummins shall retain all records and documents it claims to be privileged until the United States has had a reasonable opportunity to dispute the privilege claim and any such dispute has been finally resolved in Cummins’s favor.

XX. NON-WAIVER PROVISIONS

146. This Consent Decree does not pertain to any matters other than those expressly specified in Paragraphs 7 and 137 of this Decree. Nothing in this Consent Decree shall relieve Cummins of its obligation to comply with applicable Federal, State and local laws and regulations, and this Consent Decree does not release the liability, if any, of any person or entity for any civil claims other than the civil claims referred to in Paragraph 137, or for any criminal claims.

XXI. THIRD PARTIES

147. This Consent Decree does not limit, enlarge or affect the rights of any Party to the Consent Decree as against any third parties. Nothing in this Decree shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Consent Decree.

XXII. COSTS

148. Each Party to this action shall bear its own costs and attorneys' fees.

XXIII. PUBLIC NOTICE AND COMMENT

149. The Parties agree and acknowledge that final approval of this Consent Decree by the United States is subject to the public notice and comment requirements of 28 C.F.R. § 50.7, which requires, inter alia, notice of this Consent Decree and an

opportunity for public comment. The United States may withdraw or withhold its consent if the public comments demonstrate that entry of this Consent Decree would be inappropriate, improper, or inadequate. After reviewing the public comments, if any, the United States shall advise the Court by motion whether it seeks entry of this Consent Decree. Cummins agrees to the entry of this Consent Decree without further notice.

XXIV. MODIFICATION

150. There shall be no modification of this Consent Decree without written approval by the Parties to this Consent Decree and Order of the Court.

XXV. RETENTION OF JURISDICTION

151. This Court retains jurisdiction over both the subject matter of this Consent Decree and Cummins for the duration of the performance of the terms and provisions of this Consent Decree for the purpose of enabling any of the Parties to apply to the Court at any time for such further order, direction, and relief as may be necessary or appropriate for the construction or modification of this Consent Decree, or to effectuate or enforce compliance with its terms, or to resolve disputes in accordance with the dispute resolution procedures set forth in Section XVI.

XXVI. EFFECTIVE DATE AND TERMINATION

152. This Consent Decree shall be effective upon the Date of Entry.

153. Termination of all or any part of this Consent Decree shall occur only as provided in this Section. Termination of a part of this Consent Decree pursuant to Subparagraphs 154(a) or (b) below shall not terminate any other part.

154. (a) The certification requirements in Section VI of this Consent Decree shall terminate as of the earlier of December 31, 2004, or two years after the date in 2002 when Cummins has received Certificates of Conformity for all of its engine families required to meet the NOx plus NMHC Limit (the "Termination Date"), provided that Cummins certifies to the United States, at least 30 days prior to the Termination Date, that Cummins has met all of the requirements of Paragraphs 13 through 20 and 23 through 25 of this Decree, and provided further that the United States, prior to December 31, 2004, does not dispute Cummins's certification under the dispute resolution provisions of this Consent Decree. If, after the date of filing of this Consent Decree, regulations under the Act are promulgated imposing an emission standard or other requirement set forth in Section VI of this Consent Decree, Cummins shall not be liable for stipulated penalties or other payments (or interest thereon) associated with compliance with the corresponding Consent Decree requirements for engines manufactured after the effective date of

the new regulations. For engines manufactured before the Termination Date, or before the date such new standard or other requirement becomes effective, whichever is earlier, the stipulated penalties associated with the Section VI requirements shall remain in effect through, and shall terminate at the end of, the Useful Life of such engines.

(b) The certification requirements in Section IX.A of this Consent Decree shall terminate as of December 31, 2005, provided that Cummins certifies to the United States, at least 30 days prior to such termination date, that it has met all of the requirements of Section IX.A of this Decree, and provided further that the United States, prior to December 31, 2005, does not dispute the certification under the dispute resolution provisions of this Consent Decree. Notwithstanding termination of the certification requirements of Section IX.A pursuant to this Paragraph, requirements imposed for the Useful Life of engines subject to Section IX.A of this Consent Decree shall remain in effect through, and shall terminate at the end of, the Useful Life of such engines.

(c) The entire Consent Decree may be terminated by further order of the Court if Cummins certifies to the United States that: (i) Cummins has paid all civil penalties, interest, and stipulated penalties due under the Consent Decree; (ii) Cummins has fully and successfully completed all of the requirements of

Sections VI, VII, VIII, IX, and X; (iii) no matter subject to dispute resolution pursuant to Section XVI remains unresolved; (iv) no action to enforce the requirements of this Consent Decree is pending; and (v) if Sections VI and IX.A have not been previously terminated, the requirements in Subparagraph 154(a) and (b) above have been met. Notwithstanding this termination, the United States retains the right to enforce the Useful Life requirements set forth in Subparagraphs 154(a) and (b) above even after the termination of the entire Consent Decree, and the United States may reopen the Consent Decree for purposes of such enforcement.

155. Any dispute regarding termination of all or any part of this Consent Decree shall be resolved pursuant to the dispute resolution provisions of Section XVI of this Consent Decree.

XXVII. ENTIRE AGREEMENT

156. This Consent Decree contains the entire agreement between the United States and Cummins with respect to the subject matter hereof. The Parties acknowledge that there are no representations, agreements, or understandings relating to the settlement other than those expressly contained in this Consent Decree.

XXVIII. SIGNATORIES

157. The Assistant Attorney General of the Environment and Natural Resources Division of the Department of Justice and the undersigned representative of Cummins each certify that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind the Party he or she represents.

United States v. Cummins Engine Company, Inc. Consent Decree -- Signature Page

FOR PLAINTIFF, UNITED STATES OF AMERICA

_____

Lois J. Schiffer
Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice
10th & Pennsylvania Avenue, N.W.
Washington, D.C. 20530

_____

Trial Attorney, Environmental Enforcement Section
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United States v. Cummins Engine Company, Inc. Consent Decree -- Signature Page

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FOR CUMMINS ENGINE COMPANY, INC.

James A. Henderson
Chairman and Chief Executive Officer
500 Jackson Street
Columbus, IN 47203

So entered in accordance with the foregoing this ___ day of _____, _____.

United States District Judge

(list of affected engine families for Cummins Engine Company, Inc.)

YEAR	NAME	EPA NAME	CPL	RATING	1990 CERT	1991 CERT	1992 CERT	1993 CERT	1994 CERT	1995 CERT	1996 CERT	1997 CERT	1998 CERT
HEAVY DUTY													
N14													
1990	093M	LCE0855FZB8	1389	370@1600	X	X							
			1390	370@1600	X								
			1385	430@1700	X	X	X						
			1386	430@1700	X	X	X						
			1324	460@1700	X								
			1384	460@1700	X	X	X						
			1445	370@1600		X							
			1534	370@1600		X	X						
			1533	370@1600		X	X						
			1572	460@1700			X	X					
			1580	460@1700			X	X					
			1573	430@1700			X	X					
			1831	460@1700				X					
1991	093P	MCE0855FZB7	1391	350@1600		X							
			1392	330@1600		X							
			1393	330@1600		X							
			1540	330@1600		X							
			1537	330@1600		X							
			1394	310@1600		X							
			1535	350@1600		X	X						
			1536	330@1600		X	X						
			1538	310@1600		X	X						
			1537	330@1600			X						
			1574	350@1600			X	X					
1993	093U	PCE0855FZHX	1809	435@1600				X	X	X	X	X	
			1666	500@1700				X					
			1671	435@1800				X					
			1834	435@1600				X					
			1835	500@1700				X					
			1844	500@1700				X	X	X	X	X	
			2003	500@1700						X	X	X	
			1807	370@1600								X	
			1987	350@1600								X	
1993	093V	PCE0855FZK4	1807	370@1600				X	X	X	X		
			1670	370@1600				X					
			1833	370@1600				X					
			1987	350@1600					X	X	X		
1995	093W	SCE855EJDATW	2025	525@1800						X	X	X	

YEAR	NAME	EPA NAME	CPL	RATING	1990 CERT	1991 CERT	1992 CERT	1993 CERT	1994 CERT	1995 CERT	1996 CERT	1997 CERT	1998 CERT
1995	093X	SCE855EJDARA	2026	475@1800						X	X	X	
			2398	475@1800								X	
1995	093Y	SCE855EJDARB	2027	425@1600						X	X	X	
1998	093A1	WCEXH0855NAA	2391	525@1800									X
1998	093A2	WCEXH0855NAB	2390	475@1800									X
1998	093A3	WCEXH0855NAC	2389	425@1600									X
SUGNATURE													
1998	103A	WCEXH0912XAA	2442	600@2000									X
			2440	ISX 450									X
L10													
1990	343D	LCE0611FZA3	1347	310@1600	X								
			1367	310@1600	X	X							
			1161	330@1600	X								
			1348	330@1600	X	X							
			1367	310@1600									
			1512	330@1600		X	X						
			1514	310@1600		X	X						
			1587	330@1600			X	X					
			1589	310@1600			X	X					
			1642	280@1600			X	X					
			1669	350@1800				X					
1991	343H	MCE0611FZD5	1514	310@1600		X	X						
1992	343G	NCE0611FZC3	1511	280@2000			X						
			1590	280@2000			X	X					
1992	343I	NCE0611FZE5	1617	280@2000			X	X					
M11													
1993	353A	PCE0661FZA2	1828	330@1600				X					
			1856	330@1600				X	X	X	X		
1993	353B	PCE0661FZB3	1827	280@1600				X					
			1829	310@1600				X					
			1855	280@1600				X	X	X	X		
			1857	310@1600				X	X	X	X		
1994	353D	RCE661EJDARC	1885	400@1600					X	X	X	X	
			1973	400@1600					X	X	X	X	
			1856	330@1600								X	
			1855	280@1600								X	

YEAR	NAME	EPA NAME	CPL	RATING	1990 CERT	1991 CERT	1992 CERT	1993 CERT	1994 CERT	1995 CERT	1996 CERT	1997 CERT	1998 CERT
			1857	310@1600								X	
1994	353C	RCE661FJDAAA	1875	330@2000					X	X			
1995	353E	SCE661EJDATW	2037	400@1800						X	X	X	
1995	353F	SCE661EJDASW	2036	350@2100						X	X	X	
1996	353G	TCE661FJDAAA	2140	330@2000							X	X	
1996	353H	TCE661EJDABA	2141	330@2000							X	X	
1996	353I	TCE661EJDARC	2178	450@1800							X	X	
1998	353J	WCEXH0661MAA	2371	450@1800									X
1998	353K	WCEXH0661MAB	2370	335@2100									X
1998	353L	WCEXH0661MAC	2425	300@2100									X
1998	353M	WCEXH0661MAD	2200	450@1800									X
			2563	450@1800									X
1998	353N	WCEXH0661MAE	2199	335@2100									X
			2562	335@2100									X
1998	353O	WCEXH0661MAF	2477	400@1800									X
			2576	400@1800									X
MIDRANGE													
B5.9													
1996	403J	TCE359DJDARW	2075	175@2500							X	X	
			2080	275@2500							X	X	
			2076	190@2600								X	
			2077	210@2600								X	
			2078	230@2500								X	
			2079	250@2500								X	
			2451	275@2500									X
			2574	275@2500									X
1998	403K	WCEXH0359BAE	2450	250@2500									X
			2573	250@2500									X
			2449	230@2500									X
			2572	230@2500									X
			2448	215@2500									X
			2571	215@2500									X
			2447	195@2500									X
			2570	195@2500									X
			2446	175@2500									X

YEAR	NAME	EPA NAME	CPL	RATING	1990 CERT	1991 CERT	1992 CERT	1993 CERT	1994 CERT	1995 CERT	1996 CERT	1997 CERT	1998 CERT
			2569	175@2500									X
			2498	175@2500									X
1998	403M	WCEXH0359BAG	2024	235@2700									X
			2098	215@2700									X
			2512	235@2700									X
			2513	215@2700									X
			2516	235@2700									X
			2517	215@2700									X
			2616	235@2700									X
			2617	215@2700									X
1998	403N	WCEXH0359BAH	2279	235@2700									X
			2280	215@2700									X
			2514	235@2700									X
			2515	215@2700									X
			2518	235@2700									X
			1519	215@2700									X
			2618	235@2700									X
			2519	215@2700									X
C8.3													
1998	413J	WCEXH0505CAC	2229	350@2000									X
			2298	330@2000									X
1998	413K	WCEXH0505CAD	2092	300@2200									X
			2230	285@2200									X
			2231	275@2200									X
			2232	250@2200									X
1998	413L	WCEXH0505CAE	2233	250@2400									X
			2234	230@2400									X
			2235	215@2400									X
1998	413M	WCEXH0505CAF	2236	280@2200									X
			2237	250@2200									X

PEM\208CLEA
2

APPENDIX B - COMPANY SPECIFIC INJECTION-TIMING STRATEGIES

Appendix B-3

For Model Year 1999 only, except as set forth in Appendix B-4,Cummins may install the following AECD to protect the engine or vehicle from damage due to overheating: timing may be advanced when coolant temperature and/or intake manifold temperature rises 5° F or more above cooling fan-on temperature even if emissions exceed the applicable EURO III and NTE Limits. This feature must be inactive when the coolant temperature and/or intake manifold temperature is below 5° F above fan-off temperature. For modulated or variable-speed fans, fan-on temperature refers to the temperature at which the fan drive is fully engaged, or at which the fan is set to maximum speed; and fan-off refers to the point at which the fan drive begins to modulate off, or at which the fan is set to less than maximum speed. If the fan is not controlled directly by the engine control module, then set points for AECD activation and deactivation shall be referenced to fan-on and fan-off temperatures specified by Cummins, and subject to the above temperature difference limits and fan control state definitions.

Appendix B-4

The AECDs in Appendix B-1 shall not be active unless engine operating conditions are generally correlatable to sustained highway operation (vehicle speed of 50 mph or greater) or generally correlatable to sustained high load operation (greater than 85% of maximum load at that RPM for a one minute rolling average or greater than 75% of maximum load at that RPM for a two minute rolling average). Such AECDs shall return the engine to the injection timing values used to meet the FTP NOx levels when engine operations return to transient conditions.

The AECD described in Appendix B-3 (correlated to coolant temperature and/or other engine operating parameter(s)) is the only timing strategy that may be employed for overheat protection. This strategy may only be employed where Cummins's specifications for cooling system, charge air cooler, and/or other requirements are such that the engine can operate without the need for such AECDs at both ambient temperatures below 100 degrees F and loads below 75 percent maximum at that RPM. Such specifications shall be determined by establishing engine cooling and other system requirements based on testing at conditions at least as severe as 75 percent load and 100 degrees F ambient air and representative operating conditions. This AECD shall be limited to the lowest practicable NOx level for the purposes of overheat protection.

Any Altitude AECD described in Appendix B-2 may not be active at pressure above 82.5 kPa (below 5500 feet equivalent) and is limited to the lowest practicable NOx level after consideration of unburned hydrocarbons, black smoke and engine protection.

Any White Smoke AECD described in Appendix B-2 to control unburned hydrocarbons shall be limited to the lowest practicable NOx level after consideration of unburned hydrocarbon emissions, and engine misfire. In addition, Cummins must justify any White Smoke AECD that is active at conditions correlatable to an intake manifold temperature greater than 60 degrees F.

Any Idle AECD described in Appendix B-2 shall be limited to the lowest practicable NOx level after consideration of unburned hydrocarbon emissions, engine misfire, and engine protection and must be correlated with any relevant engine operating parameter.

Emission levels are limited to EURO III, and NTE Limits when the AECDs described in Appendix B-1 are the only active AECDs. Emissions levels are limited to EURO III, and NTE Limits except

as follows: (i) the altitude, acceleration, misfire and overheat protection AECDs, pursuant to footnote 1 of the test

protocol, to the extent needed; (ii) the White Smoke AECD for LMB Engines after July 31, 1999, shall be limited to 1.5 times the then-applicable EURO III Limits, except that, upon showing of need, higher emission limits shall be authorized; and (iii) the White Smoke AECD for Truck HHDDEs shall be limited to 1.0 times the applicable EURO III Limits, except that, upon a showing of need, higher emission limits shall be authorized.

APPENDIX C - TECHNICAL REQUIREMENTS FOR EURO III, NTE, TNTE, SMOKE (OR ALTERNATE OPACTIY) PROTOCOLS[1]

1. EURO III Requirements. Engines must meet the weighted average emission limit values applicable to the EURO III test set forth in this Consent Decree, when tested using the EURO III steady state test and emission weighting protocols identified as the "ESC test" in Annex III to the Proposal adopted by the Commission of the European Union on December 3, 1997. [2] The modal test point definition and weighting factors will be taken directly from Annex III. Except as specifically stated in this Appendix, in

[1] These emissions limits and testing requirements are in addition to any requirements applicable under the Code of Federal Regulations, and are subject to provisions for record keeping, reporting, testing and liability for non-compliance established under the Consent Decree. The waiver of the requirement to submit test data for certain emissions found in 40 C.F.R. 86.094-23(c)(2)(i) applies to these provisions. Except as specifically noted herein or in the Consent Decree, all existing EPA regulations and policies shall apply to any testing conducted under this test protocol. EPA may allow exceedances of the EURO III and Not to Exceed Limits if the manufacturer demonstrates during the certification process that the excess emissions are due to the requirements of engine starting, or conditions resulting from the need to protect the engine or vehicle against damage or accident and there are no other reasonable means to protect the engine or vehicle. In addition, during the term of this Consent Decree, EPA may allow such exceedances if the manufacturer demonstrates during the certification process that the excess emissions are due to extreme ambient conditions and that there are no reasonable means of meeting such limits under such ambient conditions. All procedures set forth in this Consent Decree shall be implemented in accordance with sound engineering practice.

[2] Proposal adopted by the Commission of the European Union on 3 December 1997, for presentation to the European Council and Parliament, titled A draft Proposal for a Directive of the European Parliament and the Council Amending Directive 88/77/EEC of 3 December 1987 on the Approximation of the Laws of the Member States Relating to the Measures to be Taken Against the Emission of Gaseous and Particulate Pollutants From Diesel Engines for Use in Vehicles." Fuel meeting the specifications of 40 C.F.R. 86.1313-94(b) for exhaust emissions testing will be substituted for the fuel specified in this Directive.

all other respects testing shall be conducted in accordance with 40 C.F.R. Part 86, unless the company proposes, and EPA approves, an alternative procedure. Engines must meet the applicable weighted average emission levels when new and in-use throughout the Useful Life of the engine and during all normal operation and use.

1.1. As part of the certification process, the manufacturer must provide ESC test results to EPA. Weighted average emissions of all regulated emissions from the ESC test must comply with the applicable limits set forth in this Consent Decree. In addition to the weighted average data, the manufacturer must supply brake specific gaseous emission data for each of the thirteen test points in the ESC test, and for up to three supplemental points selected by EPA (unless EPA advises the manufacturer otherwise) and communicated to the manufacturer in a timely manner prior to the test according to the ESC protocol.[3] In addition, for each of these sixteen test points, the manufacturer must provide upon request the concentrations and mass flow rates of all regulated gaseous emissions plus CO_2, as well as exhaust smoke opacity ("k" value) and the values of all emission-related engine control variables at each test point. Weighted average PM shall be measured and reported by the manufacturer in the Certification Application.

1.1.1 The ESC test must be conducted with all emission-related engine control variables in the highest brake-specific NO_x emissions state which could be encountered for a 30 second or longer averaging period at the given test point. The manufacturer must include a statement in the Certification Application that the test results correspond to the maximum NO_x producing condition for a 30 second or longer averaging period reasonably expected to be encountered at each test point during normal engine operation and use.

1.1.2 Any regulated gaseous emissions at any of the test points, or any interpolated points in the ESC control area, shall be at or below the

[3] The ESC test protocol includes only a NO_x check at the supplemental test points. However, under the Consent Decree and this Test Protocol all regulated gaseous emissions are included.

Not-to-Exceed Limits if within the Not-to-Exceed Region as defined in Section 2 below.

1.1.3 As part of its certification application, the manufacturer must submit a statement that its engines will comply with the applicable EURO III limit values and testing requirements during all normal engine operation and use, including the limits described in Sections 1.2-1.4.

1.1.4 For the purposes of submission of the certification application, the manufacturer shall conduct the ESC test within the temperature range of 68° F to 86° F.

1.2 For gaseous emissions, the 13 ESC test point results described in Section 1.1, along with the four-point linear interpolation procedure of the ESC test protocol (Annex III, Appendix 1, Sections 4.6, 4.6.1, and 4.6.2) for intermediate conditions, shall define maximum allowable emission limits including up to three supplemental points selected by EPA (See Figure 1). The ESC control area extends from the 25% to the 75% engine speeds, at engine loads of 25% to 100%, as defined in Annex III.

1.2.1 If the weighted composite ESC test result for any gaseous emission is lower than required in the Consent Decree, the 13 ESC test values for that pollutant shall first be multiplied by the ratio of the limit value to the composite value and then by 1.05 for interpolation allowance before determining the maximum allowable emission limits of Section 1.2.[4]

1.3 The weighted average ESC emissions limits described in Section 1.1 and the maximum allowable emission levels defined in Section 1.2 apply to testing of certification engines, production line engines, and in-use engines.

[4] The 10% allowance for NOx at interpolated points found in Section 6.2.3 of Annex 1 of the December 1997 Directive for evaluating compliance within the limit values of the Directive is reduced to 5%.

1.4 In addition to the steady state testing protocols of the ESC test, in accordance with existing regulations and the provisions of the Consent Decree, EPA may require that engines be tested under conditions that may reasonably be expected to be encountered in normal vehicle operation and use. The engine may be tested in a vehicle in actual use or on a dynamometer, under steady state or transient conditions and under varying ambient conditions. Test results within the ESC control area shall be compared to the maximum allowable emission limit for the same engine speed and

load to determine compliance. The engine, when operated within the ESC control area, must comply with the maximum allowable emissions limits.

1.4.1 Where the test conditions identified in 1.4 require departures from specific provisions of Annex III or 40 C.F.R. Part 86 (e.g., sampling time) testing shall be conducted using good engineering practice. The manufacturer shall submit a detailed description of any departures from the specific testing provisions of Annex III or 40 C.F.R. Part 86 and the justification for modifying the test procedures along with the test results submitted to EPA under testing required by Paragraph 1.4.

1.4.2 If EPA requires engine dynamometer testing by the manufacturer under non-FTP conditions, such testing shall be done at the manufacturer's facility on existing equipment, and must be carried out only within the limits of operation of the manufacturer's available test equipment with regard to ambient temperature, humidity and altitude. EPA may conduct its own confirmatory, production line or in-use testing at any ambient temperature, humidity or altitude.

1.4.3 When tested under transient conditions, emission values to be compared to the maximum allowable limits shall represent an average of at least 30 seconds.

1.4.4 Manufacturers shall collect test data documenting the effects of humidity and temperature on NOx and PM emissions for EPA to use jointly with engine manufacturers in establishing appropriate correction factors for NOx for humidity and for NOx and PM for temperature. One set of correction factors shall be established and used by all manufacturers. NOx emissions shall be corrected for humidity to a standard level of 75 grains of water per pound of dry air. Outside the temperature range of 68-86 degrees

F, NOx and PM emissions shall be corrected to 68° F if below 68° F or to 86° F if above 86° F.

1.4.5 Until January 1, 2000, the humidity correction factors found in 40 C.F.R. Part 86 shall be used for NOx, and the interim temperature correction factors developed by the manufacturers and approved by EPA by December 1, 1998 shall be used for both NOx and PM.

1.4.6 Beginning January 1, 2000, the manufacturers shall use the temperature and humidity correction factors developed as follows. By December 1, 1998, the manufacturers shall submit a test plan to EPA to develop temperature correction factors for NOx and PM and humidity correction factors for NOx over a wide range of ambient temperatures and humidity. EPA shall review and approve or disapprove the plan by December 31, 1998. If EPA disapproves the plan, it shall state the reasons why, and the manufacturers shall have 30 days to revise their plan to the satisfaction of EPA or to submit the matter for Dispute Resolution under Section XVI of the Consent Decree. The manufacturer shall implement the plan as approved by EPA or directed by the Court following any Dispute Resolution proceeding. By July 31, 1999, the manufacturers shall submit the results of their testing to EPA along with their suggested temperature correction factors for NOx and PM and humidity correction factors for NOx. By September 1, 1999, EPA shall review the test results and all other data and information collected or generated in connection with testing under the approved plan and approve or disapprove the suggested correction factors. If EPA disapproves the suggested correction factors, it shall state the reasons why, and the manufacturers shall have 30 days to revise their correction factors to the satisfaction of EPA or to submit the matter for Dispute Resolution under Section XVI of this Consent Decree .

2. Not To Exceed Limits . Engines must also meet the Not To Exceed, Smoke or alternate Opacity, and Transient Load Response Limits stated in the Consent Decree and more

specifically defined in the following Sections. Engines must meet the applicable Not To Exceed, Smoke or alternate Opacity, and Transient Load Response Limits when new and in-use throughout the Useful Life of the engine.

2.1. Except as described in Paragraph 2.1.2, the Not To Exceed Control Area includes all operating speeds above the "15% ESC Speed" calculated as in Section 2.1.1, and all engine load points at 30% or more of the maximum torque value produced by the engine. In addition, notwithstanding the provisions of Section 2.1.2, the Not To Exceed Control Area includes all operating speed and load points with brake specific fuel consumption (BSFC) values within 5% of the minimum BSFC value of the engine, unless during Certification the manufacturer demonstrates to the satisfaction of EPA that the engine is not expected to operate at such points in normal vehicle operation and use. Current engine designs equipped with drivelines with multi-speed manual transmissions or automatic transmissions with a finite number of gears are not subject to the 5% minimum BSFC additional NTE region.

2.1.1. The 15% ESC Speed is calculated using the formula $n_{lo} + 0.15(n_{hi} - n_{lo})$, where n_{lo} and n_{hi} are the low and high engine speeds defined in Annex III, Appendix 1, Section 1.1 of the earlier referenced December 3, 1997 Proposal of the Commission of the European Union.

2.1.2. The area below 30% of the maximum power value produced by the engine is excluded from the Not to

Exceed Control Area. In addition, the area defined in either (a) or (b) below, as applicable, is excluded from the Not to Exceed Control Area for PM.

a) To the right of the line from 30% of maximum torque or 30% of maximum power (whichever is greater) at the B speed to 70% of maximum power at 100% speed (n_{hi}) if the C speed is below 2400 rpm (See Figure 2(a)); or

b) To the right of the line from 30% of maximum torque or 30% of maximum power (whichever is greater) at the B speed to 50% power at 2400 rpm to 70% of maximum power at 100% speed (n_{hi}) if the C speed is above 2400 rpm. (See Figure 2(b).)

Figure 2(a)

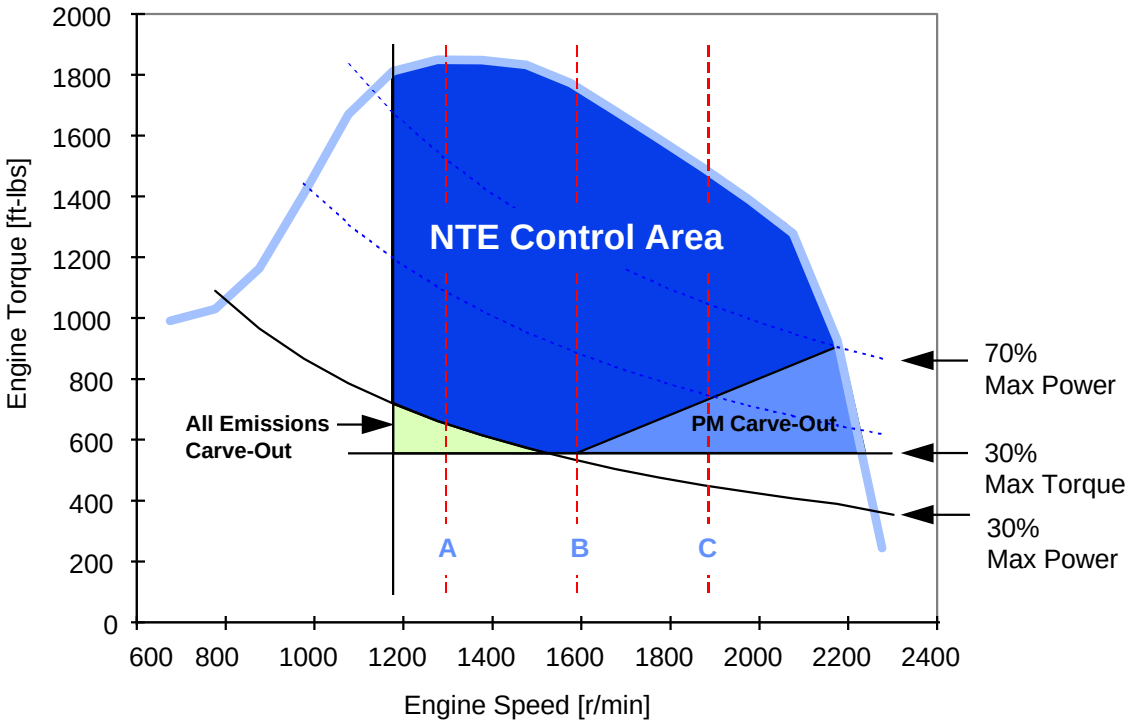
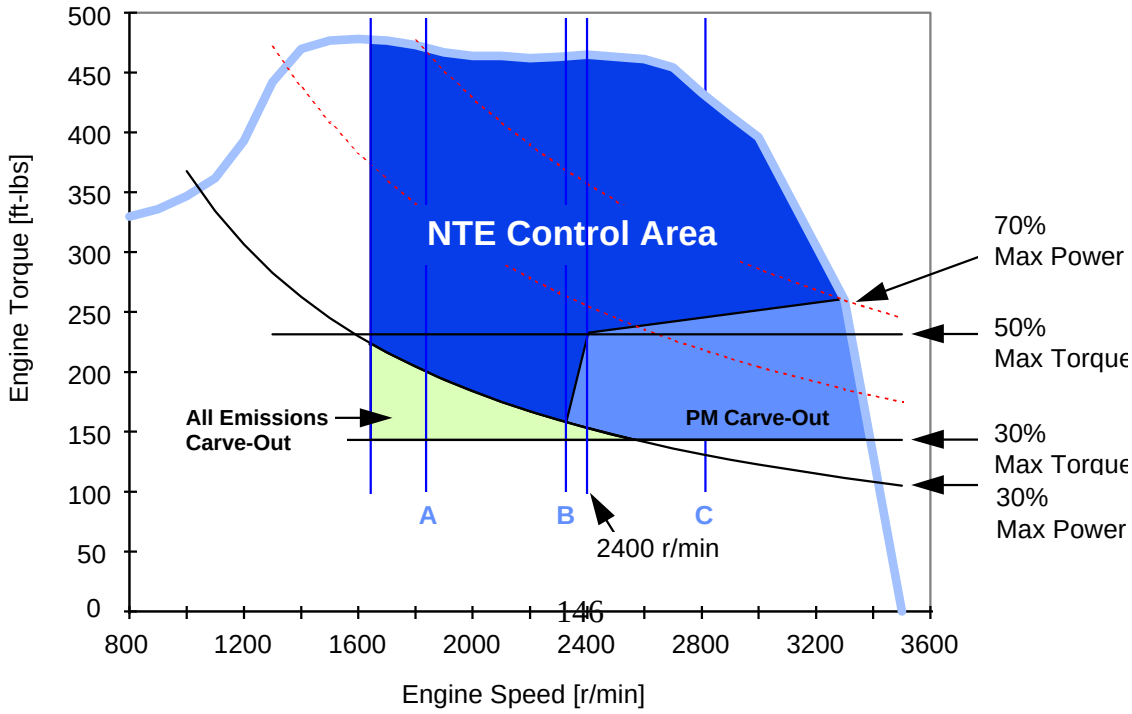


Figure 2(b)



2.2. Within the Not To Exceed Control Area, emissions of NO_x (or NO_x plus NMHC where applicable) and PM, when averaged over a minimum time of 30 seconds, shall not exceed the applicable Not to Exceed limit values specified in the Consent Decree. In addition, within the Not to Exceed Control Area, smoke and opacity shall not exceed the applicable Smoke or alternate Opacity limit values specified in the Consent Decree. In accordance with existing regulations and provisions of the Consent Decree, EPA may require that engines be tested under conditions that may reasonably be expected to be encountered in normal vehicle operation and use. If EPA requires engine dynamometer testing by the manufacturer under non-FTP conditions, such testing shall be done at the manufacturer's facility on existing equipment, and must be carried out only within the limits of operation of the manufacturer's available test equipment with regard to ambient temperature, humidity and altitude. EPA may test the engine in a vehicle in actual use or on a dynamometer, under steady state or transient conditions and under varying ambient conditions.

2.2.1 The Not To Exceed and Smoke or alternate Opacity limit values apply to certification, production line, and in-use engines.

2.2.2 As part of its certification application, the manufacturer must submit a statement that its engines will comply with the applicable Not To Exceed and Smoke or alternate Opacity limit values under all conditions which may reasonably be expected to be encountered in normal vehicle operation and use.

2.2.3 The interim correction factors to be established pursuant to Section 1.4.5 shall apply until January 1, 2000. Beginning January 1, 2000, the correction factors developed in accordance with Section 1.4.6 shall apply. Correction factors shall be used as follows:

2.2.3.1 Prior to October 1, 2002, NOx emissions shall be corrected for humidity to a standard humidity level of 75 grains of water per pound of dry air. Outside

the temperature range of 68-86 degrees F, NOx and PM emissions shall be corrected to 68° F if below 68° F or to 86° F if above 86° F.

2.2.3.2 On and after October 1, 2002, NOx emissions shall be corrected for humidity to a standard humidity level of 50 grains if below 50 grains, or to 75 grains if above 75 grains. NOx and PM emissions shall be corrected for temperature to a temperature of 55° F if below 55° F or to 95° F if above 95° F. No temperature or humidity correction factors shall be used within the ranges of 50-75 grains or 55-95° F.

2.3 Within the Not To Exceed Control Area, engines may not exceed the Transient Load Response Limit set forth in the Consent Decree. In accordance with existing regulations and provisions of the Consent Decree, EPA may require that in-use testing be done under conditions which may reasonably be expected to be encountered in normal vehicle operation and use. If EPA requires engine dynamometer testing by the manufacturer under non-FTP conditions, such testing will be done at the manufacturer's facility on existing equipment, and must be carried out only within the limits of operation of the manufacturer's available test equipment with regard to ambient temperature, humidity and altitude. EPA may test the engine in a vehicle in actual use or on a dynamometer, and under varying ambient conditions.

2.3.1 The Transient Load Response Limit values apply to certification, production line, and in-use engines.

2.3.2 As part of its certification application, the manufacturer must submit a statement that its engines will comply with the applicable Transient Load Response Limit under all conditions which may reasonably be expected to be encountered in normal vehicle operation and use.

2.3.3 The temperature and humidity correction factors developed in accordance with Section 1.4.6 of this Appendix shall be used as follows. NOx emissions shall be corrected for humidity to a standard humidity level of 50 grains if below 50 grains, or

to 75 grains if above 75 grains. NOx and PM emissions shall be corrected for temperature to a temperature of 55° F if below 55° F or to 95° F if above 95° F. No temperature or humidity correction factors will be used within the ranges of 50-75 grains or 55-95° F.

2.4 The transient load response test sequence is as follows: beginning at any point within the Not To Exceed Control Area, the engine fuel control shall be moved suddenly to the full fuel position and held at that point for a minimum of two seconds.

2.4.1 When tested on a dynamometer, this sequence shall be carried out at a constant speed setting. When tested in a vehicle, engine speed will be determined by the characteristics of the vehicle being tested.

2.4.2 The test sequence of Section 2.4 may be repeated if, for example, necessary to obtain sufficient sample amount for analysis.

3. Supplemental Emissions Test Smoke Measurements. Supplemental emissions tests may require steady-state or transient smoke measurements. Steady-state smoke measurements may be conducted using opacimeters or filter-type smokemeters. Opacimeter types include partial-flow and full-flow. Only full-flow opacimeters may be used to measure smoke during transient conditions.

3.1 For steady-state or transient smoke testing using full-flow opacimeters, equipment meeting the requirements of CFR 40, Part 86, subpart I “Emission Regulations for New Diesel Heavy-Duty Engines; Smoke Exhaust Test Procedure or ISO/DIS-11614 “Reciprocating internal combustion compression-ignition engines - Apparatus for measurement of the opacity and for determination of the light absorption coefficient of exhaust gas” is recommended.

3.1.1 All full-flow opacimeter measurements shall be reported as the equivalent % opacity for a 5 inch effective optical path length using the Beer-Lambert relationship.

3.1.2 Zero and full-scale (100% opacity) span shall be adjusted prior to testing.

3.1.3 Post test zero and full scale span checks shall be performed. For valid tests, zero and span drift between the pre-test and post-test checks shall be less than 2% of full scale.

3.1.4 Opacimeter calibration and linearity checks shall be performed using manufacturer's recommendations or good engineering practice.

3.2 For steady-state testing using filter-type smokemeter, equipment meeting the requirements of ISO-8178-3 and ISO/FDIS-10054 "Internal combustion compression-ignition engines – Measurement apparatus for smoke from engines operating under steady-state conditions – Filter-type smokemeter" is recommended.

3.2.1 All filter-type smokemeter results shall be reported as a filter smoke number (FSN) that is similar to the Bosch smoke number (BSN) scale.

3.2.2 Filter-type smokemeters shall be calibrated every 90 days using manufacturer's recommended practices or good engineering practice.

3.3 For steady-state testing using partial-flow opacimeter, equipment meeting the requirements of ISO-8178-3 and ISO/DIS-11614 is recommended.

3.3.1 All partial-flow opacimeter measurements shall be reported as the equivalent % opacity for a 5 inch effective optical path length using the Beer-Lambert relationship.

3.3.2 Zero and full scale (100% opacity) span shall be adjusted prior to testing.

3.3.3 Post test zero and full scale span checks shall be performed. For valid tests, zero and span drift between the pre-test and post-test checks shall be less than 2% of full scale.

3.3.4 Opacimeter calibration and linearity checks shall be performed using manufacturer’s recommendations or good engineering practice.

3.4 Replicate smoke tests may be run to improve confidence in single test or stabilization. If replicate tests are run, 3 additional valid test will be run, and the final reported test results must be the average of all the valid tests.

3.5 A minimum of 30 seconds sampling time will be used for

average transient smoke measurements.

APPENDIX D - IN-USE TESTING PROCEDURES

A. Selecting Test Vehicles and Process to be Used for In-Use Testing

1. Cummins shall test at a minimum four vehicles in each engine family selected by the United States using the mobile monitoring technologies agreed to in Phase I. The United States will identify engine families for testing not later than June 1 of the calendar year corresponding each model year. In general, the United States will select 3 engine families per model year for testing.

2. These four vehicles shall represent a mix of mileages within the statutory Useful Life of the engines, and shall be tested in a manner consistent with the test procedures and driving routes identified in Phase II of this project. In addition, two of the vehicles shall be reprocured by Cummins and retested over the same road routes when the vehicles have accumulated over 150% of statutory Useful Life mileage.

3. Cummins may rely on fleet contacts and agreements for supply of test vehicles, or may identify test vehicles through any other sources including contractor services. However, the four test vehicles for each engine family must come from at least two different sources. Within an identified fleet, engines shall be randomly selected for testing.

4. For vehicles with fifth-wheel trailering capability and a GVWR of 80,000 lbs or more, the route shall be driven with an appropriate trailer loaded to yield a Gross Vehicle Weight (GVW) of approximately 60,000 lbs. A second run over the same road route shall be run with the vehicle loaded to approximately 80,000 lbs. GVW. Testing of fifth-wheel equipped trucks at GVW's other than specified above (such as trucks rated below 60,000 - 80,000 lbs. GVWR) shall be conducted with the vehicle loaded to within 5% of GVWR (unless an alternate weight is approved by the United States prior to testing for good cause shown).

5. For non-fifth-wheel vehicles (i.e. school buses, vocational trucks, straight trucks, etc.), the test routes shall be driven once with the vehicle loaded to within 5% of GVWR (unless an alternate weight is approved by the United States for good cause shown). The GVW must be reported with the test

results. In no cases shall a vehicle be loaded so as to exceed the maximum GVWR or any axle weight limits.

6. Notwithstanding any test procedures developed in Phase II of this project, the driver of the test vehicle shall only have information normally available to an operator of the vehicle. The driver shall not have access to any displays or other information about which vehicle operating parameters will be monitored, and shall have no additional information during the road testing except those normally available to the operator of the vehicle.

B. Test Deadlines and Other Provisions

1. Testing of the four vehicles within statutory Useful Life shall be completed within thirty months of selection of the engine family by the United States. Retesting of the two vehicles over 150% of statutory Useful Life mileage shall be completed within forty-two months of selection of the engine family by the United States.

2. The United States may observe any portion of the test program. The Company shall designate a point of contact through which the United States can correspond regarding all aspects of this program.

3. Any adjustments or other pre-test maintenance of test vehicles shall be approved in advance by EPA.

4. Results of the compliance monitoring shall be reported to the United States on a monthly basis throughout the duration of this phase, and shall include for each test the engine serial #, rated horsepower, rated speed, engine calibration, test date, start time, test GVW, starting humidity and starting ambient temperature. In addition, the results shall include the emissions, engine speed, engine torque, fuel injection timing, oil temperature, coolant temperature, and intake manifold temperature, and other reasonable parameters requested by EPA for specific vehicle/engine applications on a second-by-second basis for the entire test.

Appendix E

Cummins Engine Company -- Proposed Environmental Projects

Cummins Engine Company will undertake the following projects as Environmental Projects, pursuant to Section IX.C. Specific proposals for project expenditures total eighteen million seven hundred fifty thousand dollars ($18,750,000) and include thirteen million seven hundred fifty thousand dollars ($13,750,000) (which is 55% of the proposed Additional Injunctive Relief/Environmental Project financial target, less Incentive Program credit), plus five million dollars ($5,000,000) to satisfy the State of California requirements. An additional six million two hundred fifty thousand dollars ($6,250,000) in Environmental Projects are to be planned subsequent to the comment period.

Technical and financial targets for each project will be refined in detailed planning following entry of the Consent Decree. The total amount to be spent by The Company will not be affected; however, the specific amounts allocated to each of the Environmental Projects may be adjusted up or down in view of the improved understanding of the elements of work and associated expense.

1. Chassis Dynamometer Vehicle Test Program $ 2.2 million

EPA, CARB and other emissions regulatory agencies have expressed interest in developing a broader understanding of in-use emissions from heavy-duty engines. This program will investigate the effect of engine use on emissions over time, and will begin to establish a database to correlate in-use, chassis-dynamometer-test, and engine-dynamometer-test emissions. The test program will establish baseline engine and vehicle emissions, track the engine through service, and test emissions periodically through the useful life period. The proposed test sequence for each engine is as follows:

1. Engine dyno emissions baseline;
2. Vehicle emissions baseline;
3. Vehicle emissions at 1/3, 2/3 and 3/3 Useful life;
4. Engine dyno emissions at Useful Life.

The engine sampling and test program will begin when the vehicle facility is operational (target 6/2001). The proposed

program will involve 30 on-highway engines in total: 10 engines from each of three successive model years: MY 2001, MY 2002, and MY 2003. Of the 30 engines, 18 will be HHDDE Truck HDDEs Engines, 6 will be MHDDE Truck HDDEs Engines, and 6 will be LMB engines.

2. Exhaust Aftertreatment Research (1999-2004) and Demonstration Programs $12.2 million (Includes $2.8MM for California)

Future low-emission engine systems must rely on engine + aftertreatment architectures that can deliver both decreases in exhaust emissions along with improved performance for the customer: improved fuel economy (decreasing CO_2), lower total cost of ownership, greater reliability, longer durability, and ease of service.

The Additional Offset Projects in this group will focus on advanced aftertreatment technologies that will be applied after 2002. Effective exhaust aftertreatment systems will allow the combustion process to be optimized for improved efficiency and for other performance characteristics, while controlling emissions downstream in the exhaust system. Final production engine + aftertreatment systems are likely to incorporate technology elements from two or more of these approaches, so that systems analysis and testing to integrate engine and NOx + particulate aftertreatment is an important part of the planned work.

Our research targets, which form the context for all of our advanced development programs, are 1.0 gm/bhp-hr NOx and 0.05 gm/bhp-hr particulates.

The primary exhaust aftertreatment technologies to be investigated in these projects are:

1. NOx reduction: lean NOx catalysts (LNC), adsorption catalysts (AC), and Selective Catalytic Reduction (SCR);

2. Particulate reduction: passive catalyzed particulate traps (PCPT) and microwave regenerated silicon carbide particulate traps (MSCT).

Cummins will evaluate each technology listed above at the analytical and bench-laboratory level at a minimum. All viable

technologies will be carried on to the next level of testing at each step of the program. The Company believes this will make it more likely that a broad spectrum of technologies will be available to support technical feasibility of lower emission standards in the future, possibly for non-road as well as on-highway applications.

In addition to developing these technologies as subsystems for Cummins products, the Company will also evaluate the passive catalyzed particulate trap (PCPT) as a possible diesel retrofit system for urban bus and other urban vehicle applications.

The Company expects to conduct at least two specific field demonstration programs of exhaust aftertreatment systems - as determined through discussions with EPA, when the results of the research are available. In addition to the above listed NOx reduction technologies, plasma assisted catalytic reduction (PACR), which is already the subject of a research CRADA between Cummins and Lawrence Livermore National Laboratories, will also be considered for field demonstration.

3. Alternative Fuel Technology and Engine Program $ 4.4 million

(Includes $2.2MM for California)

a. Natural gas advanced ignition system project. This project is directed at developing a novel ignition system for stable lean combustion. If successful, the design will be demonstrated in field test and then developed into a commercial product.

b. Gaseous fuel delivery system project. This project is directed at developing a reliable, robust fuel delivery and control system for lean combustion. If successful, the design will be demonstrated in field test and then developed into a commercial product.

c. The above technologies will be applied to develop a new natural gas engine platform, initially targeted at urban bus applications, with emission targets of less than 1.0 g/bhp-hr NOx and less than 0.05 g/bhp-hr particulate. This engine will be demonstrated in a multiple-vehicle field test as part of the development program.

State of California Environmental Projects

Proposed projects to satisfy the requirements of the State of California are included in the above list.

Sub-program expense estimates are broken out below for specific consideration by the State of California:

Chassis Dynamometer Vehicle Test Program:

Specific engines may be chosen for test according with the interests of the State of California. The estimated per-engine expense for this project is $75,000.

Exhaust Aftertreatment:

Passive Catalyzed Particulate Trap demonstration program (Alameda Transit): $2.5-3.0 million

a. Duty cycle analysis (minimum 5 vehicles) – 4Q98-2Q99
b. Pilot program (minimum 10 vehicles) – 2Q99-2Q00
c. Fleet demonstration (up to 200 vehicles) – beginning 2Q00

Note that the Plasma Assisted Catalytic Reduction research and development is being done in cooperation with Lawrence Livermore National Laboratories. The Environmental Project expense associated with this technology, if any, will be for product prototype development and field demonstration.